DOCUMENT RESUME

ED 229 660		CE 036 089

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TITLE	Anatomy and Physiology. Module No. IV. Health Occupations Education II.
INSTITUTION	South Carolina State Dept. of Education, Columbia. Office of Vocational Education.
PUB DATE	83
NOTE	311p.; For related documents, see CE 036 086-091, and instructor's manual for entire course, CE 036 085.
PUB TYPE	Guides - Classroom Use - Materials (For Learner) (051)
EDRS PRICE	MF01/PC13 Plus Postage.
DESCRIPTORS	Allied Health Occupations; *Allied Health Occupations Education; *Anatomy; Behavioral Objectives; Cardiovascular System; Check Lists; Competency Based Education; *Health Occupations; Health Personnel; Job Skills; Learning Activities; Learning Modules; Medical Education; Nursing Education; *Physiology; Reproduction (Biology); Secondary Education; Student Evaluation; Technical Occupations
IDENTIFIERS	Digestive System; Endocrine System; Muscular System; Nervous System; Respiratory System; Skeletal Systems; Skin; Urinary System

ABSTRACT

This package of 31 modules on anatomy and physiology is one of six such packages containing a total of 46 modules that comprise Health Occupations Education II, the second course of a two-year course of study. Each module may contain some or all of the following components: introduction, directions, objectives, a list of learning activities, student information sheets, student assignment sheets, student self-checklists, a description of check-out activities, an evaluator's final checklist to assess student performance, and a student self-check key. Module titles are Introduction to Anatomy and Physiology, Integumentary System, (Application of Heat, Application of Cold Compresses, Shaving the Operative Site, and Sterile Dressings), Muscular System, Skeletal System (Care of the Patient in Traction, Care of the Patient with a Cast), Circulatory System (CPR--Cardiopulmonary Resuscitation), Respiratory System (Care of the Patient Receiving Oxygen, Tracheostomy Care, Collection of Sputum Specimen, Suctioning Nasal Passage and Throat), Digestive System (Colostomy Care, Bowel Elimination, Basic Nutrition and Diet Therapy, Preparing and Giving Tube Feeding), Urinary System (Urinary Catheter Care for Indwelling Catheter, Obtaining Urine Specimens from the Catheterized Patient, Inserting a Catheter: Urethral and Retention), Reproductive System (Vaginal Irrigation and Perineal Care), Endocrine System, and Nervous System. (YLB)

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Module No. IV

ANATOMY AND PHYSIOLOGY

HEALTH OCCUPATIONS EDUCATION II

South Carolina Department of Education, Charlie G. Williams, State Superintendent

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HEALTH OCCUPATIONS EDUCATION II

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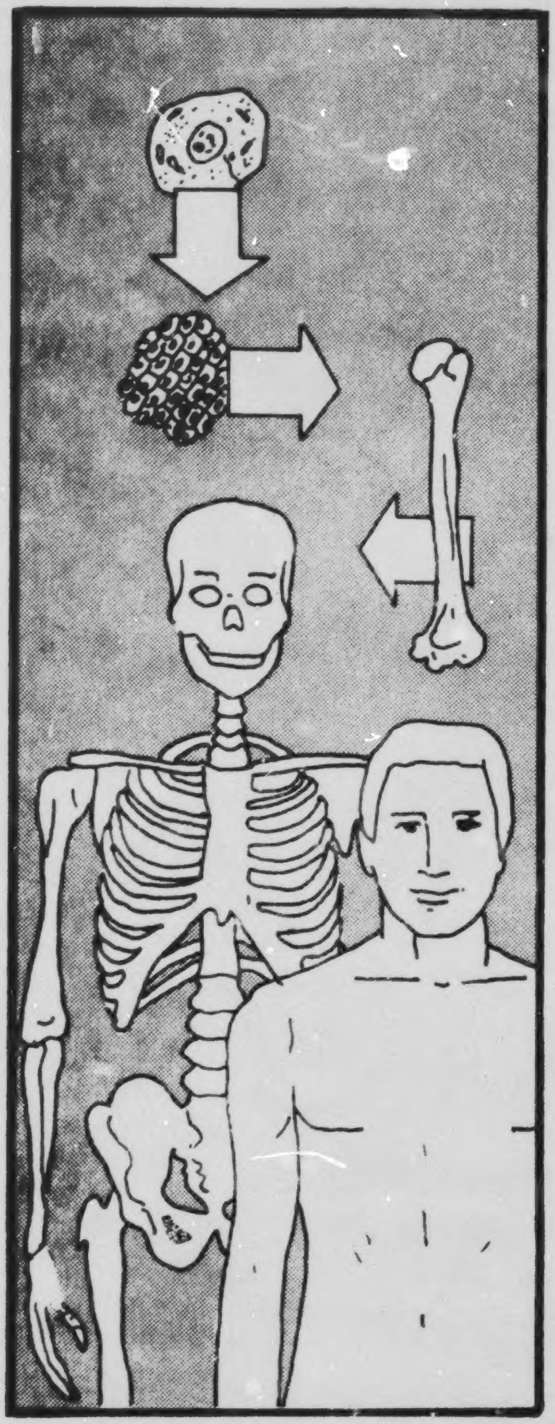
INTRODUCTION TO ANATOMY AND PHYSIOLOGY



INTRODUCTION

The human body is a highly complex structure organized into specialized systems to perform certain functions. Unlike one-celled organisms which can perform all the necessary functions to maintain life, each cell of the human body is able to perform well only a few functions on its own. In this unit you will learn the different body systems, their parts and functions.

DIRECTIONS

Read the Objective. If you think you are able to perform this task, read the Check-Out Activities. Then either arrange with your evaluator to do the Check-Out Activities,

or

If you need to complete learning activities in order to be able to perform this task, locate the section on Learning Activities and go through them in the order in which they are listed.

OBJECTIVE

Given selected instructional exercises on anatomy and physiology, you will be able to demonstrate a knowledge of the structure, function, and terminology associated with the cells, tissues, organs, and systems as they relate to the body as a whole by scoring a minimum of ____% on a teacher-prepared written examination.

LEARNING ACTIVITIES

1. READ
   a) *Health Assistant*
      Unit 24, "Anatomical Terminology," page 161
      Unit 25, page 168
   b) *Body Structures and Functions*
      Unit 1, "Introduction to the Structure"
      Unit 2, "Cells"
      Unit 3, "Tissues"
      Unit 4, "Organs and Systems"
   c) *Basic Sciences for Health Careers*
      Chapter 2, "Basics of Living Systems," page 13,

   and/or ______________________________.

2. WRITE a short definition for the terminology listed on Student Assignment Sheet No. 1 using *Taber's Cyclopedic Medical Dictionary*.

3. COMPLETE Student Self-Check. Record your answers on a separate sheet of paper.

4. ARRANGE with your evaluator to complete this module by going through the Check-Out Activities.

STUDENT ASSIGNMENT SHEET NO. 1 – INTRODUCTION TO ANATOMY AND PHYSIOLOGY

Write a short definition for the following terms.

1. Anatomy
2. Physiology
3. Hygiene
4. Excretory
5. Cranium
6. Interior
7. Anterior
8. Posterior
9. Therapeutic medicine
10. Preventive medicine
11. Lower extremities
12. Upper extremities
13. Organism
14. Thorax
15. Dorsal
16. Ventral
17. Nucleus
18. Chromatin material
19. DNA
20. Cytoplasm
21. Nerve
22. Reproduction
23. Cells
24. Mitosis
25. Mitochondria
26. Cell membrane
27. Heart
28. Vascular tissue
29. Epithelial tissue
30. Cartilage tissue
31. Differentiation
32. Tissue interspaces
33. Smooth muscle
34. Bone tissue
35. Nervous tissue
36. Skeletal muscle
37. Muscular system
38. Digestive system
39. Respiratory system
40. Circulatory system
41. Excretory system
42. Nervous system
43. Endocrine system
44. Reproductive system
45. Connective tissue
46. Distal
47. Lateral
48. Pericardium
49. Planes
50. Pleura
51. Proximal

STUDENT SELF-CHECK

Terminology

Match the terms in Column A with their definitions in Column B. Definitions may be used more than once. Check your answers against the key.

COLUMN A

1. Superior
2. Anterior
3. Medial
4. Frontal
5. Transverse
6. Posterior
7. Lateral
8. Inferior
9. Ventral
10. Dorsal

COLUMN B

A. Division of side to side
B. Middle
C. Back
D. Above
E. Side
F. Below
G. Front

11. List 5 systems and give a brief description of the function of each.

12. List 2 major organs that are located in the thoracic cavity.

13. The major organ located in the cranial cavity is called ____________________.

14. A group of organs which perform a specific function is called ____________.

15. Cells group together to form __________.

CHECK-OUT ACTIVITIES

The statement below explains the activity you must be able to complete in order to finish this module. After you complete the activity, your evaluator will rate your performance using the Evaluator's Final Checklist, INTRODUCTION TO ANATOMY AND PHYSIOLOGY.

You will be given an examination on the introduction to anatomy and physiology. You must score a minimum of ____% on the teacher-prepared written examination.

Student ____________

Date ____________

INTRODUCTION TO ANATOMY AND PHYSIOLOGY

Evaluator's Final Checklist

Check the student's performance in the following elements of introduction to anatomy and physiology.

Place an X in the appropriate box indicating Not Accomplished, Partially Accomplished, or Fully Accomplished. If, because of special circumstances, the item was impossible to complete, place an X in the Not Applicable box.

Performance Level: All items must receive a rating of FULLY ACCOMPLISHED (or Not Applicable). If any items are rated Not Accomplished or Partially Accomplished, the student and evaluator will discuss this and decide which learning activities must be repeated.

	Student Performance			
	Not Applicable	Not Accomplished	Partially Accomplished	Fully Accomplished
Student scored ____% on the teacher-prepared written examination.	[ ]	[ ]	[ ]	[ ]

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STUDENT SELF-CHECK KEY

Terminology

1. D
2. G
3. B
4. G
5. A
6. C
7. E
8. F
9. G
10. C

11. a) Skin — protects
    b) Skeletal — supports and structures
    c) Muscular — movement
    d) Circulatory — circulates blood
    e) Respiratory — exchanges oxygen and carbon dioxide
    f) Digestive — breaks down food for body to use and eliminates wastes
    g) Urinary — filters wastes
    h) Reproductive — reproduces life
    i) Nervous — controls body functions

12. Heart, lungs

13. Brain

14. A system

15. Tissue

INTEGUMENTARY SYSTEM

INTRODUCTION

The body is covered by an organ called the skin. It is one of the most important systems of the body. The skin stretches over the entire body and contributes to the mucous membrane of the mouth, nose, anus, vagina, and urethra. It is a flexible, elastic structure which has the remarkable ability to repair itself. In this module you will learn about the structures and functions of the skin.

DIRECTIONS

Read the Objective. If you think you are able to perform this task, read the Check-Out Activities. Then either arrange with your evaluator to do the Check-Out Activities,

or

If you need to complete learning activities in order to be able to perform this task, locate the section on Learning Activities and go through them in the order in which they are listed.

OBJECTIVE

Given selected instructional exercises on the integumentary system, you will be able to demonstrate a knowledge of the structure, function and terminology related to the integumentary system by scoring a minimum of ___% on a teacher-prepared written examination.

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LEARNING ACTIVITIES

1. READ
   a) *Body Structures and Functions*
   Unit 32, "The Skin," page 101
   Unit 33, "Disorders," page 103
   b) *Health Assistant*
   Unit 28, "The Integumentary System," page 193
   c) *Basic Sciences for Health Careers*
   Chapter 7, "The Skin," page 60,

   and/or ______________________.

2. VIEW Department of Health and Environmental Control filmstrip, "Your Skin," "Your Hair and Scalp," You Can do Something About Acne,"

   and/or ______________________.

3. WRITE a short definition for the terminology listed on Student Assignment Sheet No. 1 using *Taber's Cyclopedic Medical Dictionary*.

4. COMPLETE Student Self-Check. Record your answers on a separate sheet of paper.

5. ARRANGE with your evaluator to complete this module by going through the Check-Out Activities.

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STUDENT ASSIGNMENT SHEET NO. 1 – INTEGUMENTARY SYSTEM

Terminology

Write a short definition for the following terms.

1. Allergen
2. Allergies
3. Anaphylactic
4. Colloidal
5. Constrict
6. Contractures
7. Cyanotic
8. Decubitus ulcers
9. Dermis
10. Dilate
11. Emollient
12. Environment
13. Epidermis
14. Lesions
15. Obese
16. Pallor
17. Pressure sores
18. Rubor
19. Subcutaneous
20. Tactile sense

STUDENT SELF-CHECK

1. List the 3 functions of the skin.

2. Name the section of the integument which produces new living cells.

3. There are many different kinds of bacteria and fungi living on the surface of normal healthy skin. (True or False)

4. Which of the following skin structures are not made of living cells?
    A. Nails
    B. Hair
    C. Sweat glands
    D. Blood vessels

5. Name the 2 basic tissue layers which make up the structure of the skin.

CHECK-OUT ACTIVITIES

The statements below explain the activity you must be able to complete in order to finish this module. After you complete the activity, your evaluator will rate your performance using the Evaluator's Final Checklist, INTEGUMENTARY SYSTEM.

You will be given an examination on the integumentary system. You must score a minimum of ___% on the teacher-prepared written examination.

Student ____________

Date ____________

INTEGUMENTARY SYSTEM

Evaluator's Final Checklist

Check the student's performance in the following elements of integumentary system.

Place an X in the appropriate box indicating Not Accomplished, Partially Accomplished, or Fully Accomplished. If, because of special circumstances, the item was impossible to complete, place an X in the Not Applicable box.

Performance Level: All items must receive a rating of FULLY ACCOMPLISHED (or Not Applicable). If any items are rated Not Accomplished or Partially Accomplished, the student and evaluator will discuss this and decide which learning activities must be repeated.

	Student Performance			
	Not Applicable	Not Accomplished	Partially Accomplished	Fully Accomplished
Student scored ___% on the teacher-prepared written examination.	[ ]	[ ]	[ ]	[ ]

STUDENT SELF-CHECK KEY

1. A. Protection
2. B. Temperature regulation
   C. Sensation

2. Stratum germinativum

3. True

4. B

5. Dermis, epidermis

APPLICATION OF HEAT

INTRODUCTION

The application of heat or cold to the skin surface is used to relieve pain, combat local infection, check bleeding, and reduce body temperature. In this module you will learn to use hot applications in order to dilate the vessels and increase circulation to a certain area. The use of this treatment usually requires a physician's order.

DIRECTIONS

In order to complete this module you will need:

1. Chart with physician's order for type of application and location
2. Heating pad with cover
3. Basin with hot water
4. Kwik heat pack
5. 4x4 compresses or small towel
6. Watch or clock
7. Bath thermometer

Read the Objective. If you think you are able to perform this task, read the Check-Out Activities. Then either arrange with your evaluator to do the Check-Out Activities,

or

If you need to complete learning activities in order to be able to perform this task, locate the section on Learning Activities and go through them in the order in which they are listed.

OBJECTIVE

Given selected instructional exercises, a patient for whom local applications have been ordered, and the necessary equipment and supplies, the student will be able to administer the prescribed hot application to a designated area. The hot application must cover the designated area, must not wet the patient or bedding, and must remain in place the prescribed length of time.

LEARNING ACTIVITIES

1. READ *Health Assistant,* Unit 17, "Hot and Cold Applications," pages 104-111 and *Nursing Skills for Allied Health Services,* Unit 27, "Hot and Cold Applications," pages 573-585, 590-596,

   and/or ____________________________.

2. VIEW Trainex filmstrip "Local Applications of Heat and Cold,"

   and/or ____________________________.

3. WRITE a short definition for the terminology listed on Student Assignment Sheet No. 1 using *Taber's Cyclopedic Medical Dictionary.*

4. COMPLETE Student Self-Check. Record your answers on a separate sheet of paper.

5. PRACTICE the tasks.

6. ARRANGE with your evaluator to complete this module by going through the Check-Out Activities.

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STUDENT ASSIGNMENT SHEET NO. 1 – APPLICATION OF HEAT

Terminology

Write a short definition for the following terms.

1. Infrared
2. Sitz bath
3. Ultraviolet
4. Vasodilation
5. Hyperthermia
6. Hypothermia
7. Toxin
8. Systemic
9. Hemorrhage
10. Vasoconstriction
11. Suppuration

STUDENT SELF-CHECK

1. Heat causes blood vessels to
   - A. Contract
   - B. Enlarge
   - C. Dilate
   - D. Decrease

2. A physical therapist needs to supervise the use of the ultraviolet and infrared lamps because
   - A. The lamp needs to be positioned a distance from the skin of the patient
   - B. The patient needs to be observed frequently
   - C. The light causes coagulation of albumin
   - D. Heat from the lamps can cause serious burns

3. Application of heat to the upper back would cause
   - A. Bluish, mottled look to the skin
   - B. An increase of blood circulation to the area
   - C. Loss of sensation to the area
   - D. Vasodilation to systemic blood vessels

4. Why is a hot water bottle only filled 1/2 to 1/3 full?
   - A. To avoid burning the patient
   - B. To make the bottle less cumbersome to use and lighter
   - C. To make assistants fill it more often
   - D. To make it easier to expel the air

5 Hyperthermia is
   - A. An increase in body temperature above normal
   - B. A decrease in blood supply to an area
   - C. A decrease in body temperature below normal
   - D. The freezing of a body part

6. Growth of new cells and metabolism is stimulated by
   - A. Cold
   - B. Oxygen
   - C. Heat
   - D. Light

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CHECK-OUT ACTIVITIES

The statements below explain the activities you must be able to complete in order to finish this module. After you complete the activities, your evaluator will rate your performance using the Evaluator's Final Checklist, APPLICATION OF HEAT.

You will be given a physician's order, heating pad and cover, basin with hot water, Kwik heat pack, towel or 4x4 compresses, watch or clock, and bath thermometer. Perform the application of heat according to the following procedure.

1. Check the physician's orders for type of hot application and location.
2. Assemble appropriate equipment and supplies.
3. Identify patient and explain procedure.
4. Wash hands.
5. Provide protection for bedding, if indicated.
6. Prepare hot application.
    a. Activate chemical in dry pack by squeezing, shaking, or kneading.
    b. Place hot pack in container of hot water or in hydrocollator and allow to drip.
    c) Place material for compress in hot water and squeeze well.
    d) Fill hot water bottle 1/2 to 2/3 full.
    e) Cover heating pad and adjust controls.
7. Apply heat to designated area.
8. Repeat Steps 6 and 7 as necessary.
9. Clean the area.
10. Provide for comfort of patient.
11. Chart/record procedure.

IV-B-1

Student ____________________

Date ____________________

APPLICATION OF HEAT

Evaluator's Final Checklist

Check the student's performance in the following elements of application of heat.

Place an X in the appropriate box indicating Not Accomplished, Partially Accomplished, or Fully Accomplished. If, because of special circumstances, the item was impossible to complete, place an X in the Not Applicable box.

Performance Level: All items must receive a rating of FULLY ACCOMPLISHED (or Not Applicable). If any items are rated Not Accomplished or Partially Accomplished, the student and evaluator will discuss this and decide which learning activities must be repeated.

When applying heat, the student:

	Student Performance			
	Not Applicable	Not Accomplished	Partially Accomplished	Fully Accomplished
1. Checked physician's orders for type of hot application and location.	[ ]	[ ]	[ ]	[ ]
2. Assembled appropriate equipment and supplies.	[ ]	[ ]	[ ]	[ ]
3. Identified patient and explained procedure.	[ ]	[ ]	[ ]	[ ]
4. Washed hands.	[ ]	[ ]	[ ]	[ ]
5. Provided protection for bedding, if indicated.	[ ]	[ ]	[ ]	[ ]
6. Prepared hot application.				
a) Activated chemical in dry pack by squeezing, shaking, or kneading.	[ ]	[ ]	[ ]	[ ]
b) Placed hot pack in container of hot water or in hydrocollator and allowed to drip before applying to patient.	[ ]	[ ]	[ ]	[ ]
c) Placed material for compress in hot water and squeezed well before applying to patient.	[ ]	[ ]	[ ]	[ ]
d) Filled hot water bottle 1/2 to 2/3 full.	[ ]	[ ]	[ ]	[ ]
e) Covered heating pad and adjusted controls.	[ ]	[ ]	[ ]	[ ]
7. Applied heat to designated area.	[ ]	[ ]	[ ]	[ ]
8. Repeated Steps 6 and 7 as necessary.	[ ]	[ ]	[ ]	[ ]
9. Cleaned the area.	[ ]	[ ]	[ ]	[ ]
10. Provided for comfort of patient.	[ ]	[ ]	[ ]	[ ]
11. Charted/recorded procedure.	[ ]	[ ]	[ ]	[ ]

STUDENT SELF-CHECK KEY

1. C
2. D
3. B
4. B
5. A
6. C

APPLICATION OF COLD COMPRESSES

INTRODUCTION

The application of heat or cold to the skin surface is used to relieve pain, combat local infection, check bleeding, and reduce body temperature. In this module you will learn to use cold applications in order to constrict the vessels and decrease the inflammation processes. Cold also aids in numbing pain sensation. The use of this treatment (hot or cold) usually requires a physician's order.

DIRECTIONS

In order to complete this module you will need:

1. Chart with physician's order for type of application and location
2. Ice bag, cap, and collar
3. Basin with ice
4. Kwik cold pack
5. 4x4 compresses or small towel
6. Watch or clock

Read the Objective. If you think you are able to perform this task, read the Check-Out Activities. Then either arrange with your evaluator to do the Check-Out Activities,

or

If you need to complete learning activities in order to be able to perform this task, locate the section on Learning Activities and go through them in the order in which they are listed.

OBJECTIVE

Given selected instructional exercises, a patient for whom local applications have been ordered, and the necessary equipment and supplies, the student will be able to administer the prescribed cold application to the designated area. The cold application must cover the designated area, must not wet the patient or bedding, and must remain in place the prescribed length of time.

LEARNING ACTIVITIES

1. READ *Health Assistant,* Unit 17, "Hot and Cold Applications," pages 104-111 and *Nursing Skills for Allied Health Services,* Unit 27, "Hot and Cold Applications," pages 573-577, 586-596,

   and/or ______________________

2. VIEW Trainex filmstrip, "Local Applications of Heat and Cold,"

   and/or ______________________.

3. PRACTICE the tasks.

4. COMPLETE Student Self-Check. Record your answers on a separate sheet of paper.

5. ARRANGE with your evaluator to complete this module by going through the Check-Out Activities.

STUDENT SELF-CHECK

Multiple Choice

1. Which of the following will occur when cold is applied?

   A. Increase in metabolic rate
   B. Rapid removal of toxins and waste products
   C. Decrease in blood supply to area
   D. Reduction in tissue swelling

2. When working with electrical equipment you should always avoid

   A. Plugging a coil with wet hands.
   B. Touching controls without a doctor's order.
   C. Using the equipment with a patient who is receiving oxygen.
   D. Using a cover between the patient's skin and the hot or cold applicator.

3. Why is a patient able to tolerate the dry cold of an ice [illegible] longer than the local application of ice-cold water?

   A. The dry cold intensity is greater than the wet cold.
   B. Dry cold decreases muscle contractions.
   C. Ice bag numbs the nerve endings.
   D. Water is a better conductor of cold than air.

Matching

Match the terms in Column A with their definitions in Column B.

COLUMN A

1. Hypothermia
2. Metabolism
3. Systemic
4. Toxin
5. Conduction
6. Evaporation
7. Vasoconstriction

COLUMN B

A. Relating to entire system
B. Transfer of heat and cold by direct touch
C. Poison
D. Change of water to water vapor
E. Body temperature below normal range
F. Decrease in opening of vessels
G. Process of taking in food, breaking it down, and producing energy

CHECK-OUT ACTIVITIES

The statements below explain the activities you must be able to complete in order to finish this module. After you go through the activities, your evaluator will rate your performance using the Evaluator's Final Checklist, APPLICATION OF COLD COMPRESSES.

You will be given a physician's order, ice bag, cap or collar, basin with ice, Kwik cold pack, towel or 4x4 compresses, and a watch. Perform the application of cold according to the following procedure.

1. Check the physician's orders for type of cold application and location.
2. Assemble appropriate equipment and supplies.
3. Identify patient and explain procedure.
4. Wash hands.
5. Provide protection for bedding, if necessary.
6. Prepare cold application.
    a) Activate chemical in dry pack by squeezing, shaking, or kneading.
    b) Fill ice cap, collar, or bag 1/2 to 2/3 full with ice.
    c) Place material for compress in ice water and squeeze well.
7. Apply cold to designated area.
8. Repeat Steps 6 and 7 as necessary.
9. Clean the area.
10. Provide for comfort of patient.
11. Chart/record procedure.

IV-B-2

Student ____________________

Date ____________________

APPLICATION OF COLD COMPRESSES

Evaluator's Final Checklist

Check the student's performance in the following elements of application of cold compresses.

Place an X in the appropriate box indicating Not Accomplished, Partially Accomplished, or Fully Accomplished. If, because of special circumstances, the item was impossible to complete, place an X in the Not Applicable box.

Performance Level: All items must receive a rating of FULLY ACCOMPLISHED (or Not Applicable). If any items are rated Not Accomplished or Partially Accomplished, the student and evaluator will discuss this and decide which learning activities must be repeated.

When applying cold compresses, the student:

	Student Performance			
	Not Applicable	Not Accomplished	Partially Accomplished	Fully Accomplished
1. Checked the physician's order for type of cold application and location.	☐	☐	☐	☐
2. Assembled appropriate equipment and supplies.	☐	☐	☐	☐
3. Identified patient and explained procedure.	☐	☐	☐	☐
4. Washed hands.	☐	☐	☐	☐
5. Provided protection for bedding, if necessary.	☐	☐	☐	☐
6. Prepared cold application.				
a) Activated chemical in dry pack by squeezing, shaking, or kneading.	☐	☐	☐	☐
b) Filled ice cap, collar, or bag 1/2 to 2/3 full with ice.	☐	☐	☐	☐
c) Placed material for compress in ice water and squeezed well before applying to patient.	☐	☐	☐	☐
7. Applied cold to designated area.	☐	☐	☐	☐
8. Repeated Steps 6 and 7 as necessary.	☐	☐	☐	☐
9. Cleaned the area.	☐	☐	☐	☐
10. Provided for comfort of patient.	☐	☐	☐	☐
11. Charted/recorded procedure.	☐	☐	☐	☐

STUDENT SELF-CHECK KEY

Multiple choice

1. C
2. A
3. D

Terminology

1. E
2. G
3. A
4. C
5. B
6. D
7. F

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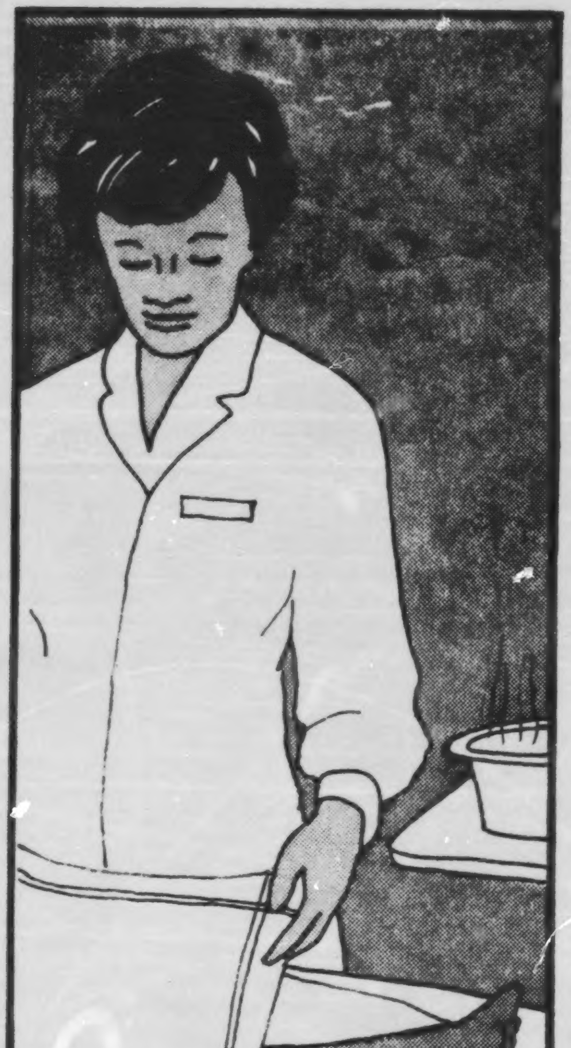
SHAVING THE OPERATIVE SITE



INTRODUCTION

Before an operation, the patient's skin in and around the operative area should be as free of hair and bacteria as possible. Hair is usually removed by shaving and the skin is cleansed to reduce the chance of infection. An assistant in the operating room usually gives preoperative skin care; however, you may be expected to do this in some hospitals. In this module, you will learn how to shave the operative site.

DIRECTIONS

In order to complete this module you will need:

1. Chart with physician's orders for type of surgery
2. Skin prep kit
3. Warm water
4. Antiseptic soap
5. Two plastic disposible containers
6. 3x3's (4 per student)
7. Cotton tip applicator
8. Soap
9. Razor

Read the Objective. If you think you are able to perform this task, read the Check-Out Activities. Then either arrange with your evaluator to do the Check-Out Activities,

or

If you need to complete learning activities in order to be able to perform this task, locate the section on Learning Activities and go through them in the order in which they are listed.

OBJECTIVE

Given selected instructional exercises, a patient scheduled for surgery, and the necessary equipment and supplies, the student will be able to prepare a clean operative site. The required prep solution must be used and the prep site must be shaved free of hair without causing irritations or injury to skin.

LEARNING ACTIVITIES

1. READ Student Information Sheet No. 1 and *Health Assistant*, "Shaving the Operative Area," page 183,

   and/or ______________________________ .

2. VIEW Trainex filmstrip, "Preoperative Skin Preparation" and/or OBSERVE demonstration given by your instructor.

3. COMPLETE Student Self-Check. Record your answers on a separate sheet of paper.

4. ARRANGE with your evaluator to complete this module by going through the Check-Out Activities.

STUDENT INFORMATION SHEET NO. 1 – PREPARATION OF SKIN FOR SURGERY

Purpose

To learn how to remove hair, cleanse and disinfect the operative area is the purpose of this information sheet. Hair shafts can harbor organisms and even though the skin cannot be sterilized, skin preparation helps to reduce the chances of introducing organisms into the operative site.

Equipment and Supplies

Prep tray
Sterile towel (for sterile preparation)
Betadine scrub soap (PhisoHex may be substituted for Betadine scrub if ordered by physician)
Warm water

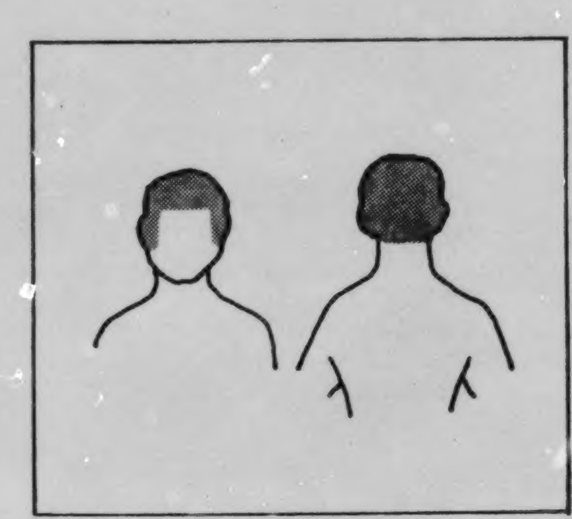
Procedure	Key Points
1. Assemble equipment at bedside.	
2. Check identification band.	
3. Instruct and screen patient.	Avoid unnecessary exposure.
4. Only expose the area to be prepared.	
5. Partially fill both compartments of tray with warm tap water.	Use one compartment to dampen sponge and other compartment to rinse razor.
6. Slip bed protector (absorbent side up) between area to be prepped and bed linens.	
7. If long hair is present, clip with bandage scissors.	
8 Apply surgical soap to small part of area to be prepped.	
9 Moisten sponge in water and lather small part of area where surgical scrub soap was applied.	
10. Remove plastic protective cover with thumb pressure at the end of the razor head.	
11. While holding skin taut, shave soaped area using smooth, even strokes which follow the direction of hair growth.	Cotton tipped applicators may be used to clean umbillicus. Shave a much larger area than the immediate area for the incision to further reduce the possibility of infection (unless contraindicated through the physician's orders).

12. Rinse soap and hair from razor in water in second compartment.	
13. Apply surgical scrub soap; moisten sponge and lather another small area.	
14. Shave that area.	
15. Clean nails thoroughly using orange stick if extremity is being prepped.	
16. Continue until entire area is shaven.	Always shave perineal area last if it is included in the area to be prepped.
	Length of time will be indicated by physician's orders.
17. Scrub prep area with surgical scrub soap the designated length of time.	
18. Complete prep based on type of surgical scrub used.	
a) If using Betadine, rinse remaining surgical scrub from skin and dry with white disposable towel.	Use extra towels if necessary. Use sterile towel if prep is sterile.
b) If using PhisoHex, leave remaining surgical scrub soap on skin and allow area to air dry.	A sterile dressing may be ordered by surgeon. This should be applied following the scrub. Orthopedic surgery usually requires a sterile dressing.
19. Empty water and dispose of prep tray, sponge, bed protector, disposable towel, and cotton tip applicators.	
20. Dispose of razor and blades in a receptacle which is appropriate for sharp objects.	
21. Record procedure in appropriate place on chart.	

Unless a physician has indicated the exact area to be prepared, the following guide may be used to prepare the skin for a specific surgery.

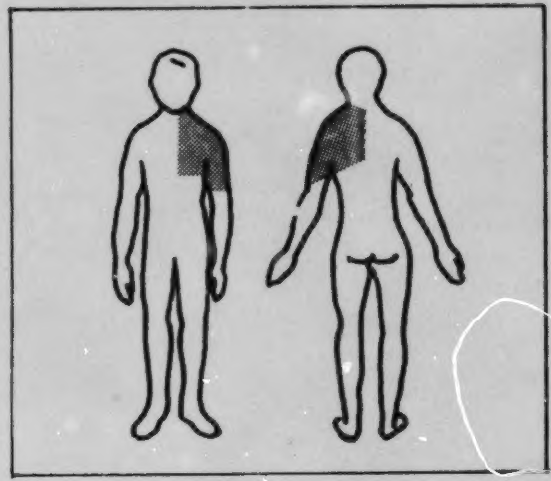
Head Surgery

The prepared area includes the hair on the head only. Clip the entire head in the late evening before surgery and shampoo head with Betadine. Shave the head early the next morning and wash the scalp with Betadine. Dispose of the hair in a paper bag or according to your agency's policy. Cover head after shaving.



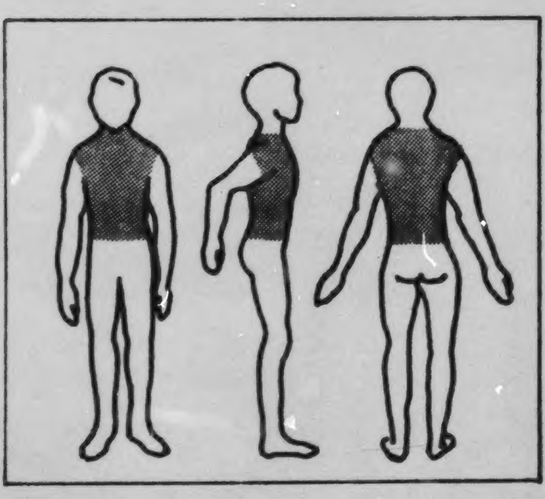
Shoulder and Upper Extremity Surgery

The prepared area extends from the nipple through the shoulder blade and includes the axilla and upper arm, right or left side.



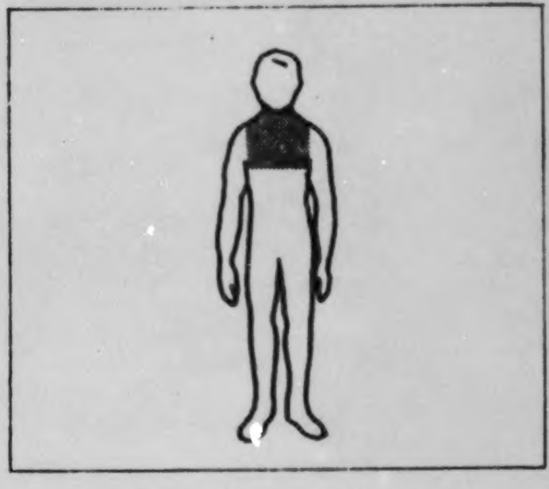
Chest-Unilateral Surgery

The prepared area extends from the clavical to the iliac crest and includes the right or left chest, back, and axilla.



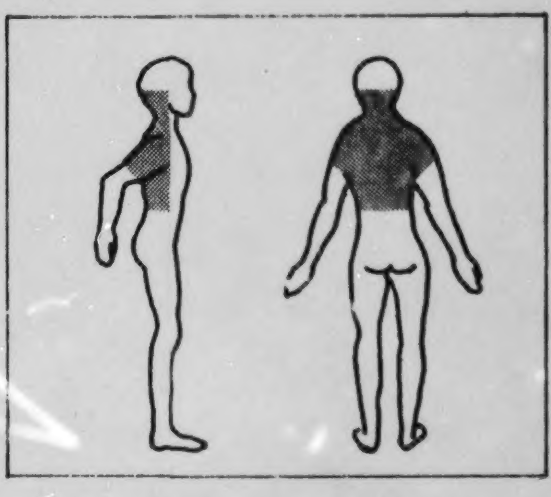
Upper Thoracic Surgery

The prepared area for women extends from the chin through the nipple line. Only wash this area. DO NOT SHAVE PATIENT. In preparing the male patient, instruct patient to shave in the early morning of the day of surgery; then prep the area from the chin through the nipple line.



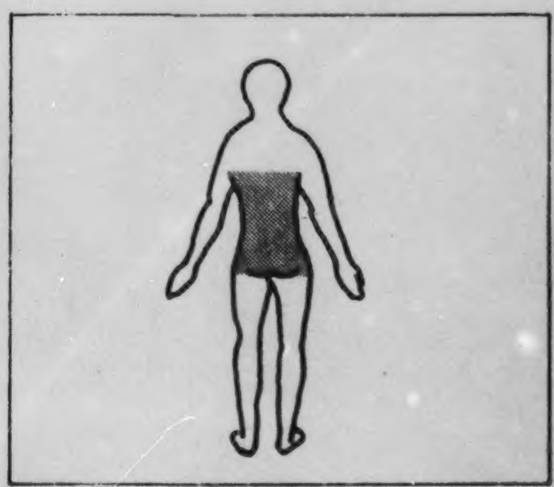
Cervical Laminectomy

The prepared area extends from the top of the ear on the back of the head, through the middle back, and side to side to bedline. The neck and shoulders should also be included.



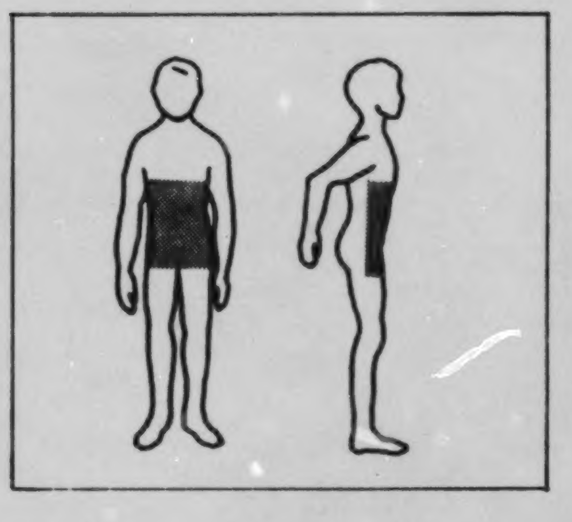
Lumbar Laminectomy

The prepared area extends from the shoulder blades downward to include upper thighs, and side to side to the bedline.



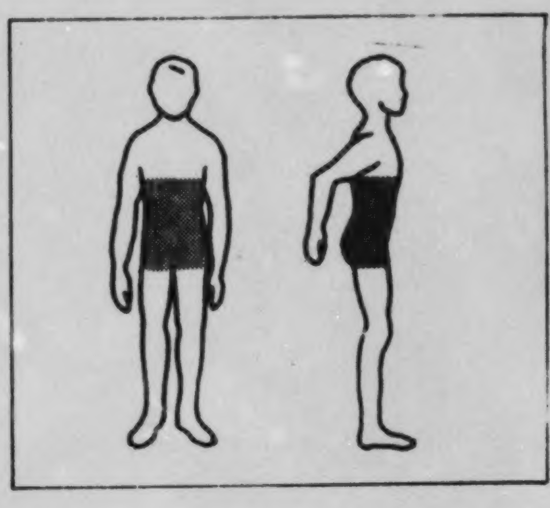
Abdominal Surgery

The prepared area extends from the level of the nipple to the upper thighs and includes the external genitalia. Laterally it extends around the body to the bedline on either side. Note operating room prep slip for further instructions.



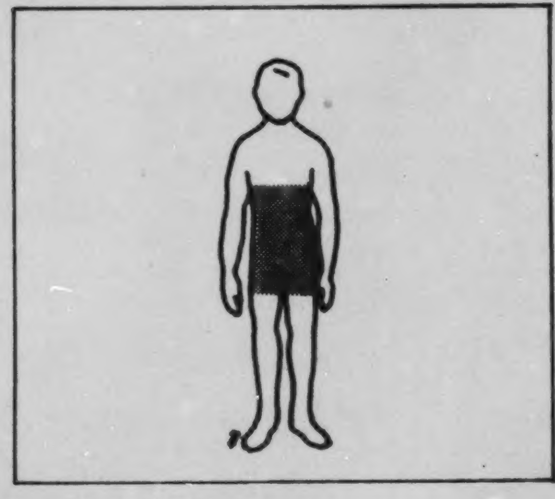
Renal and Upper Ureteral Surgery

The prepared area extends from the nipple line through the pubic hair and includes the operative flank.



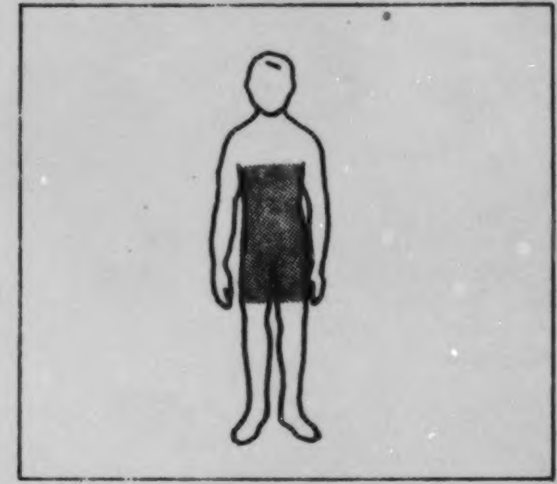
Gynecological Surgery

The prepared area extends from the nipple line to the upper level of the thighs, and side to side to the bedline. See operating room prep slip for further instructions.



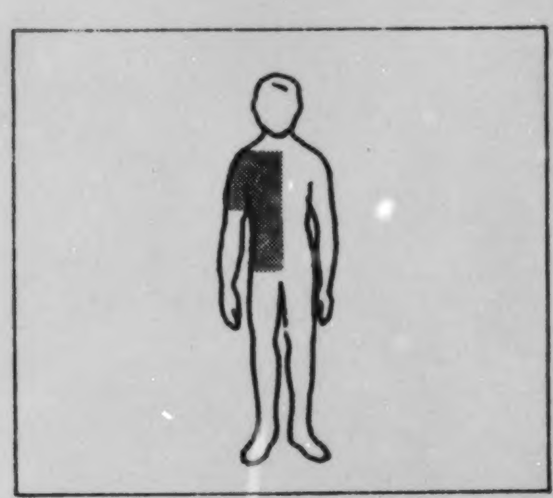
Lower Renal and Ureteral Surgery

The prepared area covers the nipple line through the pubic hair and includes the upper thighs. Complete peri-prep.



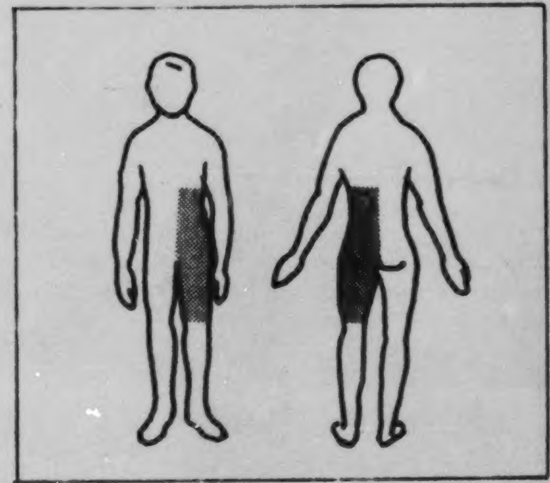
Breast Biopsy or Mammectomy

The prepared area extends from the clavical to the iliac crest, plus the opposite side, axilla, and upper arm.



Hip Surgery

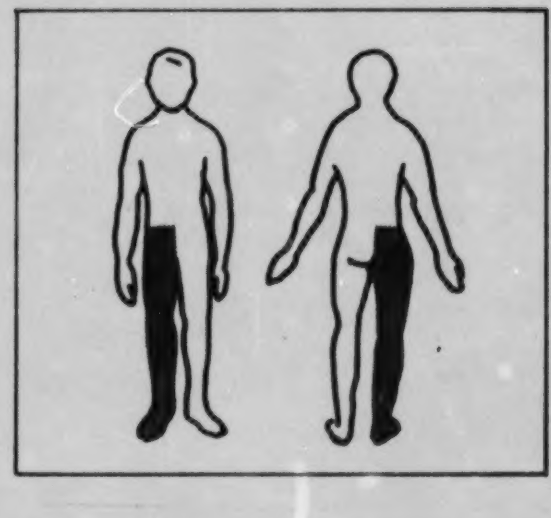
The prepared area extends from a level just below the rib cage through the pubic hair and includes the right or left leg, the operative buttock, flank, and a complete peri-prep.



Hip Pinnings (Lateral Approach) or Vein Stripping

The prepared area extends from the iliac crest through the pubic hair and includes the entire operative leg. A complete peri-prep should also be done.

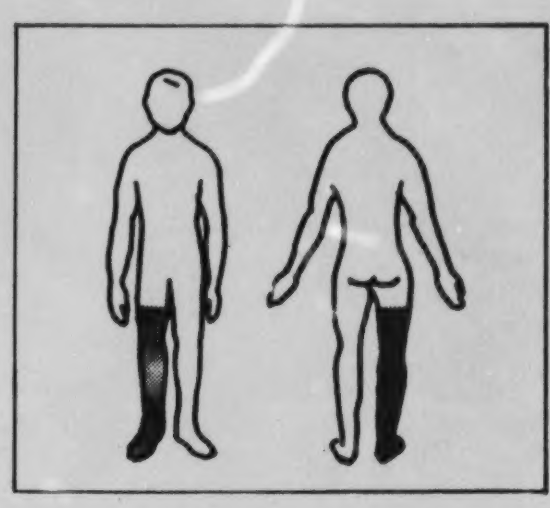
Prep both legs if bilateral vein stripping is to be done.



Knee Surgery

The prepared area should cover the circumference of the entire left or right leg through the toes.

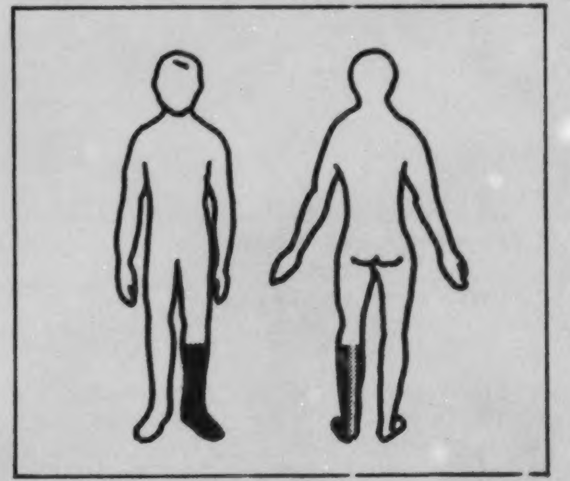
Clean under the toenails.



Ankle, Foot, or Toe Surgery

The prepared area extends from the knee and covers the circumference of the lower leg including the toes.

Clean under the toenails.



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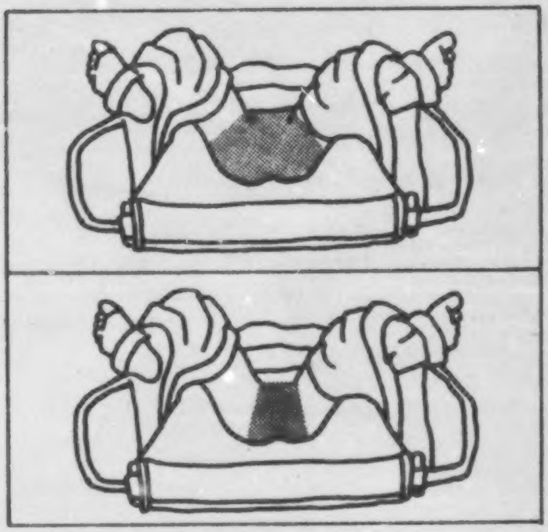
Minor Vaginal Surgery

Maxi-Prep

The prepared area covers the perineal region. Anteriorly it extends from a point just above the pubis and posteriorly to a point just beyond the anus. The inner part of both thighs is included.

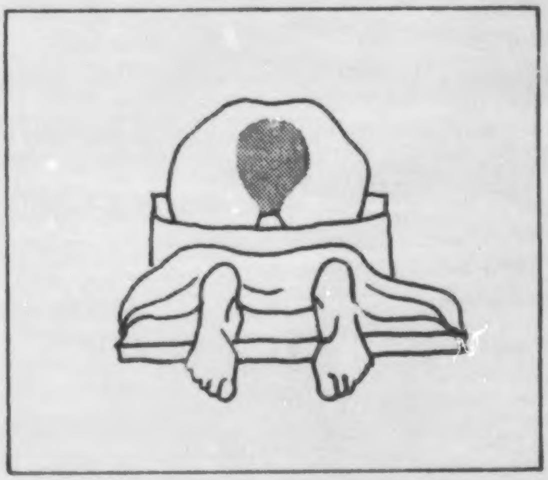
Mini-Prep

The prepared area begins just below the pubis and extends to a point just beyond the anus. The pubic hair and the inner aspect of the thighs are not included.



Ano-Rectal Surgery

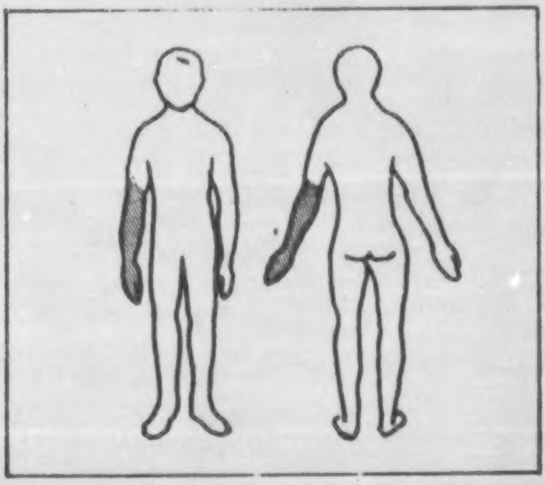
The prepared area includes a wide area around the rectum.



Forearm or Hand Surgery

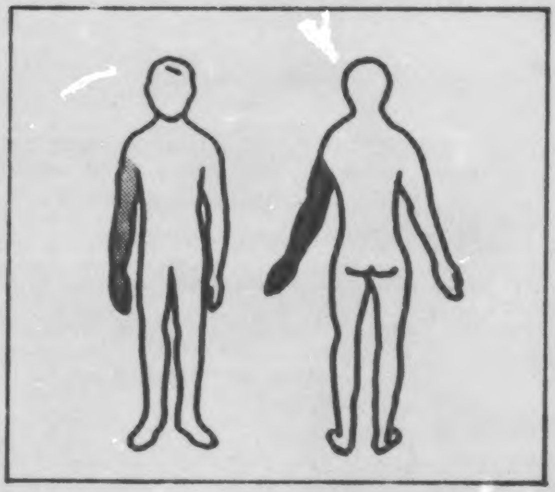
The prepared area should include the full circumference of the arm.

Clean under the fingernails.



Forearm, Elbow Surgery

The prepared area should include the full circumference of the arm from the axilla to the fingertips.



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STUDENT SELF-CHECK

Answer the following questions on a separate piece of paper. Check your answers with the key. If you have incorrect answers, go back through Learning Activities 1 and 2.

1. What is the purpose of the preoperative skin preparation?
2. Why should hair in the operative area be removed by shaving?
3. Why do you prepare a much larger area of skin than the immediate area of the incision?
4. For what type of surgery might you apply a sterile dressing after shaving and cleansing the skin?
5. What physical observations should the assistant make during the skin preparation?
6. While shaving body hair, in which direction should you shave?
7. What can be used to cleanse the umbilicus?
8. If an extremity is to be prepped, what should be used to cleanse the nails?

CHECK-OUT ACTIVITIES

The statements below explain the activities you must be able to complete in order to finish this module. After you go through the activities, your evaluator will rate your performance using the Evaluator's Final Checklist, SHAVING THE OPERATIVE SITE.

Given a patient for surgery and the necessary orders, equipment and supplies, shave and prepare the operative site. The correct solution must be used and the operative site must be shaved free of hair without causing irritation or injury to the skin.

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IV-B-3

Student ____________________

Date ____________________

SHAVING THE OPERATIVE SITE

Evaluator's Final Checklist

Check the student's performance in the following elements of shaving the operative site.

Place an X in the appropriate box indicating Not Accomplished, Partially Accomplished, or Fully Accomplished. If, because of special circumstances, the item was impossible to complete, place an X in the Not Applicable box.

Performance Level: All items must receive a rating of FULLY ACCOMPLISHED (or Not Applicable). If any items are rated Not Accomplished or Partially Accomplished, the student and evaluator will discuss this and decide which learning activities must be repeated.

	Student Performance			
	Not Applicable	Not Accomplished	Partially Accomplished	Fully Accomplished
When preparing a clean operative site, the student:				
1. Used the required prep-solution.	☐	☐	☐	☐
2. Shaved the designated prep site free of hair without causing irritation or injury to the skin.	☐	☐	☐	☐

STUDENT SELF-CHECK KEY

1. To have the operative area free of hair and as free of bacteria as possible
2. Because hair shafts harbor bacteria which could be introduced into the operative area
3. To further reduce the chance of infection during surgery
4. Before orthopedic (bone) surgery
5. Observe for any cuts, abrasions, broken areas, rash, pimples, etc., which could lead to infection
6. Shave in the direction of hair growth
7. Cotton tipped applicators dipped in the antiseptic solution used for shaving and cleaning
8. An orangewood stick

STERILE DRESSINGS

INTRODUCTION

The frequency with which dressings are changed is dependent upon the needs of the patient and to some extent upon the orders of the physician. The most important requirement for successful care of a wound is careful asepsis. In this module you will learn to perform a sterile dressing change using aseptic technique.

DIRECTIONS

In order to complete this module you will need:

1. Sterile gloves
2. Sterile gauze (size is dependent on size of wound)
3. Tape
4. Two sterile towels for working surface
5. Sterile cotton balls or 3 x 4's
6. Sterile cup for solution
7. Cleansing solution as ordered
8. Sterile thumb forceps
9. Paper bag

Before you complete this module, be sure you have completed Health Occupations Education I Module I-F, *Putting On and Removing Gloves and Face Masks,* and Module I-G, *Putting on and Removing Sterile or Non-Sterile Isolation Gown.*

Read the Objective. If you think you are able to perform this task, read the Check-Out Activities. Then either arrange with your evaluator to do the Check-Out Activities,

or

If you need to complete learning activities in order to be able to perform this task, locate the section on Learning Activities and go through them in the order in which they are listed.

OBJECTIVE

Given selected instructional exercises and necessary sterile dressing supplies, you will be able to change a dressing in precise accordance with the aseptic technique.

LEARNING ACTIVITIES

1. READ Student Information Sheets Nos. 1-4,

   and/or ____________________________.

2. VIEW Trainex filmstrip, "Sterile Technique and Dressing Change,"

   and/or ____________________________.

3. WRITE a short definition for the terminology listed on Student Assignment Sheet No. 1 using *Taber's Cyclopedic Medical Dictionary.*

4. COMPLETE Student Self-Check. Record your answers on a separate sheet of paper.

5. PRACTICE the tasks.

6. ARRANGE with your evaluator to complete this module by going through the Check-Out Activities.

STUDENT INFORMATION SHEET NO. 1 – STERILE DRESSING – PURPOSE AND METHOD

Purpose of Sterile Dressing

1. To prevent contamination/infection
2. To protect the wound from further injury
3. To apply medications
4. To apply pressure and keep the edges together to promote healing
5. To absorb secretions and drainage

Method	Principles
1. Check all supplies needed; make sure nothing is missing.	To insure continuity of process
2. Introduce self and identify patient.	
3. Wash hands.	
4. Screen patient.	
5. Prepare equipment. a) Nonsterile equipment (1) Open bag for soiled dressing. (2) Cut adhesive tape. b) Sterile equipment (1) Open sterile towel. (2) Place two sterile forceps on towel with handles over edge of towel (if not using sterile gloves). (3) Open dressing packs and place on towel with forceps. (4) Pour solution in sterile cup.	Planning ahead minimizes unnecessary wound exposure. Sterile work field is prepared.
6. Remove soiled dressing and place in paper bag. a) When removing tape, remove along longitudinal axis; this is less injurious and less painful. Peel back edges by holding skin taut and pulling away from skin. Remove tape near a wound by pulling toward the wound. b) Use an unsterile forceps to remove soiled dressing.	It is less traumatic to push skin away from tape than to pull tape from skin. Pulling away may tear some of the newly formed tissue.
c) Place dressing in paper bag; place forceps in bag or unsterile towel, away from the field.	Dressings are not to be handled by ungloved hands because of the possibility of transmitting pathogenic organisms. Sterile materials should be handled aseptically. Cleaning removes organisms, tissues debris, and drainage which retards healing

7. Cleanse the wound using sterile forceps or put on a sterile pair of gloves. a) Dip sterile cotton balls in solution; squeeze excess solution and cleanse in a circular motion from the edges of the wound outward. b) Discard forceps if used for cleaning.	Do not go over area already cleansed since this would contaminate the cleaned area. If additional cleansing is needed, take clean cotton balls and start again from the center and work outward in a circular manner.
8. Cover the wound with sterile dressing using second sterile forceps or sterile gloved hands. Secure dressing with adhesive tape; remove sterile gloves.	Well secured dressings protect the wound from trauma and minimize the danger of organisms entering the wound.
9. Carry soiled items in paper bag to dirty utility room. Place resuable items on dirty instrument tray.	Removes offensive odors and prevents cross infection.
10. Make sure patient is comfortable. Wash hands.	
11. Chart procedure or report it to the appropriate charge person. Include where the dressing was applied, amount of drainage, and anything unusual.	Proper documentation insures an accurate record of wound care and follow up.

Note

If sutures, skin clips, or packing are to be removed, this is done following Step 7. Check with physician if orders are not specific regarding removal of these items or regarding dressing changes.

Controversy exists concerning the many antiseptic solutions available. Injudicious use of antiseptics may be damaging to tissue areas. When in doubt, obtain orders from physicians.

Above procedures were written for the staff member working alone. In ideal conditions, dressings should be done by two people working in unison (one to work from sterile field, the other to open packages and handle unsterile items). This system, however, is not always possible when only one person is available.

STUDENT INFORMATION SHEET NO. 2 – DRESSING OF WOUND

Points to Remember

1. Be familiar with the principles underlying aseptic technique and be aseptic conscious.
2. Always wash hands before and after doing a dressing.
3. Dress clean cases first.
4. Always hold forceps with point down.
5. Always face a sterile field.
6. Always work from the side of a sterile field—not over it.
7. When handling a sterile recepticle, grasp it in such a way that the fingers do not touch the rim or inner surface.
8. When handling packages containing sterile equipment, remember that the inside is sterile only if the wrapper is intact.
9. When using sterile ointment, dip out required amount with sterile tongue blade. Place tongue blade on sterile field with contaminated end off field. If sterile gloves are to be worn, the tongue blade must be kept sterile.
10. When using sterile solutions from bottles or flasks, pour small amount over edge before using.
11. Do not transfer sterile supplies from one container to another.
12. If a break in technique occurs, discard the contaminated article.
13. Supplies are contaminated in the following situations.
    a) If they touch an unsterile field
    b) If they are touched with ungloved hands
    c) If the field becomes wet
    d) If a pin is inserted into sterile package
14. On burn patients and patients on dressing isolation, REFER to modules on isolation techniques found in Health Occupations Education I.Two pairs of gloves should be used — the first for removing soiled dressings and the new gloves applied when the cleansing procedure is initiated.
15. Some prepacked items and solutions have expiration dates. Be alert for this and return them to the proper department if necessary.
16. If patient or family member will have to continue wound care after discharge, plan several unhurried teaching sessions to assure continuity of treatments.

STUDENT INFORMATION SHEET NO. 3 – HANDLING STERILE SUPPLIES AND EQUIPMENT

"Remember these two points in handling sterile equipment: (1) never touch sterile articles or surfaces with unsterile ones, and (2) do not use an article if you should happen to contaminate it. Every movement in aseptic procedures is a link in the chain of asepsis – if you break one link by contaminating something, the chain is broken, and you open the door to infection.

Handle sterile equipment with forceps sterilized on the end that touches the sterile things. A long forceps with a flat broad tip—a sponge forceps—is often used to handle sterile materials, to remove sterile dressings from containers or sterile instruments and basins from the sterilizer or to set up trays. The forceps is kept in a tall, wide-mouthed jar of disinfectant solution, which keeps only the forceps sterile. The container and the forceps are sterilized at intervals. The container is filled with enough solution to cover at least two thirds of the forceps. Always hold the forceps with the sterile end down to prevent its contamination.

A sterile tray can be prepared by covering a tray with a sterile towel and placing the sterile equipment on it with the sterile handling forceps. In removing supplies from sterile jars, put the covers down INSIDE UP, to keep them sterile, and touch only the outer surface of the cover with your hand when removing or replacing it. Avoid touching the outside unsterile part of the jar or its cover with the sterile forceps or with the sterile article you are removing. If you spill liquid on the sterile towel covering the tray, it is no longer sterile because the wet spot furnishes a point for organisms to penetrate from the unsterile tray beneath."[1]

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[1] Claire F. Hoffman and Gladys B. Lipkin, Simplified Nursing (Philadelphia: J. B. Lippincott Co., 1981), pp. 221-222.

STUDENT INFORMATION SHEET NO. 4 – PRECAUTIONS

1. Remember these points when using forceps.
   a) Use to transfer objects to sterile field
   b) Use to apply dressing on patient
   c) Handle with care to avoid touching unsterile objects
   d) Hold forceps with tips down to avoid solution from running down to unsterile part

2. Hold objects at waist height; any area above the shoulders and below the waist is considered contaminated.

3. Always wash your hands before removing supplies.

4. Place covers with the inside up to avoid contaminating them.

5. Drop sterile articles on the sterile field; transfer forceps are not to touch the field.

6. If sterile rubber gloves are unecessary for the procedure, place the handles off the side of the sterile field.

7. Never reach across a sterile field.

8. A sterile field is no longer sterile when it becomes wet; it is then considered contaminated.

9. A one-inch border around the sterile package edge is considered contaminated when removing an article from a sterile package. Be sure to lift it out carefully to avoid touching the edge. If the article does touch the edge, it is considered contaminated and should *not* be used.

STUDENT ASSIGNMENT SHEET NO. 1 – STERILE DRESSINGS

Write a short definition for the following terms.

1. Circular
2. Contaminate
3. Bacteria
4. Pathogen
5. Nonpathogen
6. Nosocomial
7. Transmission
8. Asepsis
9. Antiseptic
10. Discard
11. Disinfectant
12. Sterilize
13. Clean
14. Dirty
15. Sterile

STUDENT SELF-CHECK

True or False

1. It is permissible to reach across a sterile field as long as nothing is touched.
2. Hands are the number one carrier of germs.
3. Every part of a sterile package is considered sterile.
4. When removing a cover from a sterile package, place the cover inside up to keep it sterile.
5. When you are uncertain whether or not an article is sterile, go ahead and use it.
6. Sterile articles can only touch sterile surfaces.
7. The forceps used to remove the soiled dressing are used to apply the new sterile dressing.
8. Tape can be easily pulled off the skin without being careful of tearing the skin on the wound.
9. The wound is cleaned in a circular motion from outside in, toward the wound.
10. Cotton balls used for cleaning are discarded after each outward circular motion.

CHECK-OUT ACTIVITIES

The statements below explain the activities you must be able to complete in order to finish this module. After you go through the activities, your evaluator will rate your performance using the Evaluator's Final Checklist, STERILE DRESSINGS.

Given the necessary supplies and a patient, change a dressing with precision according to the aseptic technique.

1. Collect the necessary equipment.
2. Introduce self and identify patient.
3. Wash hands.
4. Prepare a sterile dressing field.
5. Remove soiled dressing and discard it in paper bag.
6. Clean the wound outward from center, using sterile forceps or sterile gloves.
7. Discard soiled cottton balls after each stroke or circular motion and remove soiled forceps from area.
8. Apply sterile dressing with sterile forceps or sterile gloves.
9. Dispose of contaminated articles properly.
10. Wash hands.
11. Chart/record important information appropriately.

IV-B-4

Student ______________

Date ______________

STERILE DRESSINGS

Evaluator's Final Checklist

Check the student's performance in the following elements of sterile dressings.

Place an X in the appropriate box indicating Not Accomplished, Partially Accomplished, or Fully Accomplished. If, because of special circumstances, the item was impossible to complete, place an X in the Not Applicable box.

Performance Level: All items must receive a rating of FULLY ACCOMPLISHED (or Not Applicable). If any items are rated Not Accomplished or Partially Accomplished, the student and evaluator will discuss this and decide which learning activities must be repeated.

When changing a dressing using the aseptic technique, the student:

	Student Performance			
	Not Applicable	Not Accomplished	Partially Accomplished	Fully Accomplished
1. Collected the necessary equipment.	[ ]	[ ]	[ ]	[ ]
2. Introduced self and identified patient.	[ ]	[ ]	[ ]	[ ]
3. Washed hands.	[ ]	[ ]	[ ]	[ ]
4. Prepared a sterile dressing field.	[ ]	[ ]	[ ]	[ ]
5. Removed soiled dressing and discarded it in paper bag.	[ ]	[ ]	[ ]	[ ]
6. Cleaned the wound outward from center with sterile forceps or sterile gloves.	[ ]	[ ]	[ ]	[ ]
7. Discarded soiled cotton balls after each stroke or circular motion and removed soiled forceps from area.	[ ]	[ ]	[ ]	[ ]
8. Applied sterile dressing with sterile forceps or sterile gloves.	[ ]	[ ]	[ ]	[ ]
9. Disposed of contaminated articles properly.	[ ]	[ ]	[ ]	[ ]
10. Washed hands.	[ ]	[ ]	[ ]	[ ]
11. Charted/recorded important information appropriately.	[ ]	[ ]	[ ]	[ ]

STUDENT SELF-CHECK KEY

1. False
2. True
3. False
4. True
5. False
6. True
7. False
8. False
9. False
10. True

MUSCULAR SYSTEM

INTRODUCTION

The muscular system provides movement by pulling on the bones. The muscles also help keep the body erect, determine posture, and produce most of the heat that is generated in the body. In this module you will learn about the structure, function, and related terminology associated with the muscular system.

DIRECTIONS

Read the Objective. If you think you are able to perform this task, read the Check-Out Activities. Then either arrange with your evaluator to do the Check-Out Activities,

or

If you need to complete learning activities in order to be able to perform this task, locate the section on Learning Activities and go through them in the order in which they are listed.

OBJECTIVE

Given selected instructional exercises on the muscular system you will be able to demonstrate a knowledge of the structure and function of the muscular system and the related terminology by scoring a minimum of ___% on a teacher-prepared written examination.

LEARNING ACTIVITIES

1. READ
   - a) *Health Assistant*
     Unit 31, "The Musculoskeletal System," pages 216-224
   - b) *Body Structures and Functions*
     Unit 9, "Introduction to the Muscular System," pages 28-29
     Unit 10, "Attachment of Muscles," pages 30-31
     Unit 11, "Principle Skeletal Muscles," pages 32-34
     Unit12, "Abnormal Muscular Conditions," pages 35-36
   - c) *Basic Sciences for Health Careers*
     Chapter 10, "The Muscular System," pages 99-116,

   and/or ______________________________.

2. VIEW Trainex filmstrip, "The Skeletal and Muscular System,

   and/or ______________________________.

3. WRITE a short definition for the terminology listed on Student Assignment Sheet No. 1 using *Taber's Cyclopedic Medical Dictionary*.

4. COMPLETE Student Self-Check. Record your answers on a separate sheet of paper.

5. ARRANGE with your evaluator to complete this module by going through the Check-Out Activities.

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STUDENT ASSIGNMENT SHEET NO. 1 – MUSCULAR SYSTEM

Terminology

Write a short definition for the following terms.

1. Myology
2. Skeletal muscles
3. Tendon
4. Flaccid
5. Fatigue
6. Atrophy
7. Antagonist
8. Intramuscular
9. Hypertrophy
10. Involuntary muscle
11. Visceral muscle
12. Voluntary muscle
13. Paralysis
14. Spasm
15. Oxidation

STUDENT SELF-CHECK

True or False

If the statement is false, change the word/words to make it true.

1. Myology is the study of bones.
2. Atrophy means wasting away.
3. Flaccid is lacking muscle tone.
4. Tendon is a narrow strip of dense connective tissue that attaches bones to bones.
5. Tonus is a slight tension in the bone which is always present even when the tissue is resting.

Multiple Choice

1. Abduct means to

   A. Move toward a part
   B. Lower a part
   C. Move away from a part
   D. None of the above

2. Flex means to

   A. Straighten a joint
   B. Bend a joint
   C. Revolve a part on its axis
   D. None of the above

3. Levator is a muscle which serves to

   A. Move away from body part
   B. Raise a body part
   C. Move toward a body part
   D. Lower a body part

4. Contractibility is

   A. A shortening or thickening when given proper stimulus
   B. The ability to stretch
   C. The ability to return to its original length after stretching
   D. The ability to respond to stimulation

Fill in the Blanks

1. Muscle which counteracts with a prime mover is ____________________
2. Muscle primarily responsible for a specific action is ____________________
3. The muscle located in your neck is ____________________
4. Name the four major functions of the muscles.

CHECK-OUT ACTIVITIES

The statement below explains the activity you must be able to complete in order to finish this module. After you go through the activity, your evaluator will rate your performance using the Evaluator's Final Checklist, MUSCULAR SYSTEM.

You will be given an examination on the structure, function, and related terminology associated with the muscular system. You will be expected to score a minimum of ___% on the teacher-prepared written examination.

IV-C

Student ____________

Date ____________

MUSCULAR SYSTEM

Evaluator's Final Checklist

Check the student's performance in the following elements of the muscular system.

Place an X in the appropriate box indicating Not Accomplished, Partially Accomplished, or Fully Accomplished. If, because of special circumstances, the item was impossible to complete, place an X in the Not Applicable box.

Performance Level: All items must receive a rating of FULLY ACCOMPLISHED (or Not Applicable). If any items are rated Not Accomplished or Partially Accomplished, the student and evaluator will discuss this and decide which learning activities must be repeated.

	Student Performance			
	Not Applicable	Not Accomplished	Partially Accomplished	Fully Accomplished
Student scored ____% on the teacher-prepared written examination.	[ ]	[ ]	[ ]	[ ]

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STUDENT SELF-CHECK KEY

True or False

1. Myology is the study of muscles.
2. True
3. True
4. Tendon is a narrow strip of dense connective tissue that attaches muscles to bones.
5. Tonus is a slight tension in the muscle which is always present even when the muscle is resting.

Multiple Choice

1. C
2. B
3. B
4. A

Fill in the Blanks

1. Antagonist
2. Prime mover
3. Sternocleidomastoid
4. A. Allow movement
   B. Produce heat and energy
   C. Dictate posture and body mechanics
   D. Protect internal organs

SKELETAL SYSTEM

INTRODUCTION

The skeletal system provides support for the body. The bony framework of the body is formed by the skeletal system with the bones and joints being the most important parts. In this module you will learn about the structure and function of the skeletal system.

DIRECTIONS

Read the Objective. If you think you are able to perform this task, read the Check-Out Activities. Then either arrange with your evaluator to do the Check-Out Activities,

or

If you need to complete learning activities in order to perform this task, locate the section on Learning Activities and go through them in the order in which they are listed.

OBJECTIVE

Given selected instructional exercises on the skeletal system you will be able to demonstrate a knowledge of the structure and function of the skeletal system and related terminology by scoring a minimum of___% on a teacher-prepared written examination.

LEARNING ACTIVITIES

1. READ
   a) *Health Assistant*
      Unit 31, "The Musculoskeletal System," pages 216-224
   b) *Body Structures and Functions*
      Unit 5, "The Body Framework," pages 14-17
      Unit 6, "Structure and Formation of Bone," pages 18-20
      Unit 7, "Parts of the Skeleton," pages 21-24
      Unit 8, "Injuries and Diseases of Bones and Joints, pages 25-26
   c) *Basic Sciences for Health Careers*
      Chapter 9, "Skeletal Anatomy," pages 80-98,

   and/or ______________________________.

2. VIEW
   a) South Carolina Department of Health and Environmental Control filmstrips
      "I Am Joe's Spine"
      "Human Body — The Muscular System"
   b) Trainex filmstrip
      "The Skeletal and Muscular System."

   and/or ______________________________.

3. WRITE a short definition for the terminology listed on Student Assignment Sheet No. 1 using *Taber's Cyclopedic Medical Dictionary*.

4. COMPLETE Student Assignment Sheet No. 2 using the text references listed in Activity 1.

5. COMPLETE Student Self-Check. Record your answers on a separate sheet of paper.

6. ARRANGE with your evaluator to complete this module by going through the Check Out Activities.

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STUDENT ASSIGNMENT SHEET NO. 1 – SKELETAL SYSTEM

Write a short definition for the following terms.

1. Abduction
2. Adduction
3. Arthritis
4. Aspiration
5. Bursae
6. Bursitis
7. Cartilage
8. Cervical
9. Complete fracture
10. Compound fracture
11. Extension
12. Flexion
13. Immobilization
14. Ligament
15. Orthopedic
16. Pelvic
17. Point of insertion
18. Point of origin
19. Rotation
20. Simple fracture
21. Suppination
22. Pronation
23. Ossification
24. Leukocytes
25. Joint

STUDENT ASSIGNMENT SHEET NO. 2 – BONES AND JOINTS

1. List the four types of bones and give one example of each.

2. List the five types of movable joints and give one example of each.

3. Define a partially movable joint and give an example.

4. Define an immovable joint and give an example.

5. List the parts of the skeleton.

   A. Axial skeleton
      1)
      2)
      3)
      4)

   B. Appendicular skeleton
      1)
      2)
      3)
      4)
      5)

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STUDENT SELF-CHECK

Fill in the blanks with skeletal or muscular.

A. Maintaining good posture refers to the _____ system.

B. The _____ and _____ system(s) should use body mechanics at all times.

C. Adequate oxygen supply is needed for the _____ system.

D. Excessive load on the _____ system could cause strain.

E. The _____ system dictates special attention to foot care.

2. Name five components of the bones.

3. Classify types of bones by placing "L" for long bones, "S" for short bones, "F" for flat bones, "I" for irregular bones, and "SE" for sesomoid bones.

   A. Ribs
   B. Wrist
   C. Patella
   D. Hip
   E. Humerus
   F. Face
   G. Ankle
   H. Tibia
   I. Sternum

4. Identify the following types of joints by placing "I" for immovable, "SM" for slight movable, and "FM" for freely movable.

   A. Symphyois pubis
   B. Cranium
   C. Elbow, wrist, and finger joints
   D. Shoulder joints
   E. Sacroiliac joints

CHECK-OUT ACTIVITIES

The statement below explains the activity you must be able to complete in order to finish this module. After you go through the activity, your evaluator will rate your performance using the Evaluator's Final Checklist, SKELETAL SYSTEM.

You will be given an examination on the skeletal system. You will be expected to score a minimum of ___% on the teacher-prepared written examination.

IV-D

Student ____________________

Date ____________________

SKELETAL SYSTEM

Evaluator's Final Checklist

Check the student's performance in the following elements of the skeletal system.

Place an X in the appropriate box indicating Not Accomplished, Partially Accomplished, or Fully Accomplished. If, because of special circumstances, the item was impossible to complete, place an X in the Not Applicable box.

Performance Level: All items must receive a rating of FULLY ACCOMPLISHED (or Not Applicable). If any items are rated Not Accomplished or Partially Accomplished, the student and evaluator will discuss this and decide which learning activities must be repeated.

	Student Performance			
	Not Applicable	Not Accomplished	Partially Accomplished	Fully Accomplished
Student scored ____% on the teacher-prepared written examination.	[ ]	[ ]	[ ]	[ ]

STUDENT SELF-CHECK KEY

1. A. Skeletal
   B. Skeletal, muscular
   C. Muscular
   D. Muscular
   E. Skeletal

2. A. Water
   B. Inorganic salts
   C. Epithelial cells
   D. Organic materials
   E. Enzymes

3. A. F
   B. S
   C. SE
   D. I
   E. L
   F. I
   G. S
   H. L
   I. F
   J. L

4. A. Skull
   B. Vertebrae
   C. Ribs and sternum
   D. Upper extremities
   E. Lower extremities

5. A Sm
   B. I
   C. FM
   D. FM
   E. SM

Module No. IV-D-1

CARE OF THE PATIENT IN TRACTION

INTRODUCTION

In order to keep certain body parts in alignment after injury or surgery, the use of traction is necessary. Traction is a device using a pulling force by means of weights. There are two main types of traction, skeletal and skin. In this module you will learn about the principles of traction and how to care for a patient in traction.

DIRECTIONS

In order to complete this module you will need:

1. Traction set-up
2. Patient in traction

Read the Objective. If you think you are able to perform this task, read the Check-Out Activities. Then either arrange with your evaluator to do the Check-Out Activities,

or

If you need to complete learning activities in order to perform this task, locate the section on Learning Activities and go through them in the order in which they are listed.

OBJECTIVE

Given a traction set-up, a patient, and selected instructional exercises on the principles of traction, you will be able to perform the required care for a patient in cast according to an approved set of standards. (Refer to Evaluator's Final Checklist at conclusion of module.)

LEARNING ACTIVITIES

1. READ *Health Assistant*, Unit 31, "The Musculoskeletal System" pages 221-223 and *Nursing Skills for Allied Health Services*, Unit 21, "Special Skin Care," pages 454-455,

   and/or ______________________.

2. VIEW Trainex filmstrip, "Care of the Patient in Traction,"

   and or ______________________

3. STUDY Student Information Sheet No. 1.

4. PRACTICE the tasks involved in caring for a patient in traction.

5. COMPLETE Student Self Check. Record your answers on a separate sheet of paper.

6. ARRANGE with your evaluator to complete the module by going through the Check-Out Activities.

STUDENT INFORMATION SHEET NO. 1 – GUIDELINES FOR THE CARE OF THE PATIENT IN TRACTION

1. Maintain body alignment as prescribed.
2. Do not remove weights without an order. (Traction is often ordered as an intermittent or constant type of treatment.)
3. Be certain that pulley ropes are in proper alignment and weights hang free. (Bed will usually be adjusted so that weights do not touch floor or hit end of bed.)
4. Keep siderails up.
5. Use fracture pan if patient is on bedrest.
6. Avoid covering any parts of traction apparatus.
7. Avoid bumping or jarring bed or traction apparatus.
8. Give proper skin care.
9. Make certain to have assistance to turn patient, if permissable, in a smooth procedure.

STUDENT SELF-CHECK

Fill in the Blanks

1. _____ is the process of drawing or pulling.
2. When patient is in traction, the health assistant should give proper ____________ ____________ .
3. You should always maintain ______ ______ as prescribed.
4. Always keep _______ up when patient is in traction.
5. Avoid _________ any parts of traction apparatus.

True or False

Write true or false for each statement; if false, correct statement to make it true.

1. Patients remain in intermittent traction continually.
2. Check for areas of pressure or irritation.
3. Traction is applied by attaching weights to a part of the body above or below the area to be treated.
4. Traction may be applied intermittently.
5. Special nursing care to patients in traction insures proper alignment, prevents pressure areas, and avoids skin breakdown.

Completion

1. List 4 functions of traction.
2. Give 2 types of traction and define the difference.
3. List 4 important points in caring for a patient in traction.

CHECK-OUT ACTIVITIES

The statements below explain the activities you must be able to complete in order to finish this module. After you complete the activities, your evaluator will rate your performance using the Evaluator's Final Checklist, CARE OF THE PATIENT IN TRACTION.

You will be given a traction set-up and a patient. Perform the required care for the patient according to the following standards.

1. Maintain proper alignment of self and patient.
2. Check that weights are in place and hanging freely.
3. Check that ropes are hanging straight and free of tangles.
4. Check that traction apparatus is not covered by bed linen.
5. Make certain that patient is not exposed.
6. Avoid bumping or jarring bed and weights.
7. Turn and position patient in a smooth procedure.
8. Put up side rails.
9. Leave patient in comfortable position with call bell in reach.
10. Chart/record the care

IV-D-1

Student ____________________

Date ____________________

CARE OF THE PATIENT IN TRACTION

Evaluator's Final Checklist

Check the student's performance in the following elements of care of the patient in traction.

Place an X in the appropriate box indicating Not Accomplished, Partially Accomplished, or Fully Accomplished. If, because of special circumstances, the item was impossible to complete, place an X in the Not Applicable box.

Performance Level: All items must receive a rating of FULLY ACCOMPLISHED (or Not Applicable). If any items are rated Not Accomplished or Partially Accomplished, the student and evaluator will discuss this and decide which learning activities must be repeated.

When caring for a patient in traction, the student:

	Student Performance			
	Not Applicable	Not Accomplished	Partially Accomplished	Fully Accomplished
1. Maintained proper body alignment of				
a) self.	☐	☐	☐	☐
b) the patient.	☐	☐	☐	☐
2. Checked that weights were in place and hanging freely.	☐	☐	☐	☐
3. Checked that ropes were hanging straight and free of tangles.	☐	☐	☐	☐
4. Checked that traction apparatus was not covered by bed linen.	☐	☐	☐	☐
5. Made certain that patient was not exposed.	☐	☐	☐	☐
6. Avoided bumping or jarring bed and weights while performing patient care.	☐	☐	☐	☐
7. Turned and positioned patient in a smooth procedure.	☐	☐	☐	☐
8. Put up side rails.	☐	☐	☐	☐
9. Left patient in comfortable postion with call bell in reach.	☐	☐	☐	☐
10. Charted/recorded care.	☐	☐	☐	☐

STUDENT SELF-CHECK KEY

Fill in the Blanks

1. Traction
2. Skin care
3. Body alignment
4. Side rails
5. Covering

Ture or False

1. False: Patients don't remain in intermittent traction continually.
2. True
3. True
4. True
5. True

Completion

1. A. To keep areas in proper position
   B. To help spasmotic muscles relax
   C. To relieve pressure
   D. To pull two body areas slightly apart

2. A. Continuous – in traction all the time
   B. Intermittent – in traction for a specific period, then out of traction for a specific period

3. A. Do not bump weights or let them swing.
   B. Keep patient in good alignment.
   C. Check areas for pressure or irritation.
   D. Check that halters and belts are smooth, straight, and secured properly.

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Module No. IV-D-2

CARE OF THE PATIENT WITH A CAST

Module No. IV-D-2

CARE OF THE PATIENT WITH A CAST

INTRODUCTION

Caring for patients with diseases or injuries of the bones or joints requires immobilization so that healing can take place. Fractures of bones must be immobilized in the correct position and this may require the placement of casts or splints. In some cases surgical repair and pinning are necessary to correct a fracture. In this module you will learn how to care for the patient with a cast.

DIRECTIONS

In order to complete this module you will need:

1. Patient or manikin with cast
2. Bed
3. Soap
4. Water
5. Bath towel and washcloth
6. Lotion
7. Gauze and tape

Read the Objective. If you think you are able to perform this task, read the Check-Out Activities. Then either arrange with your evaluator to do the Check-Out Activities,

or

If you need to complete learning activities in order to be able to perform this task, locate the section on Learning Activities and go through them in the order in which they are listed.

OBJECTIVE

Given a patient in a cast, appropriate equipment, and selected instructional exercises on the care of this type of patient, you will be able to perform satisfactorily required cast care according to an approved set of standards. (Refer to Evaluator's Final Checklist at conclusion of module.)

LEARNING ACTIVITIES

1. READ *Health Assistant,* Unit 31, "The Musculoskeletal System," page 221 and *Nursing Skills for Allied Health Services,* Unit 21, "Special Skin Care," pages 451-454, 455-457,

   and/or ______________________________.

2. VIEW Trainex filmstrip, "Care of a Patient in a Cast,"

   and/or ______________________________.

3. PRACTICE the tasks involved in caring for a patient with a cast.

4. COMPLETE Student Self-Check. Record your answers on a separate sheet of paper.

5. ARRANGE with your evaluator to complete this module by going through the Check-Out Activities.

STUDENT SELF-CHECK

True or False

Write true or false for each statement; if false, correct statement to make it true.

1. Skin care is not important for patients in cast.

2. You should inspect cast and injured areas frequently.

3. Bed linen should be kept smooth.

4. Handle cast carefully if still wet to avoid any indentation that might cause pressure points.

5. To relieve pressure on body, support cast with pillows, sand bags, or swing as indicated.

Multiple Choice

1. Signs of decreased circulation include all of the following except

   A. Warmth
   B. Coldness
   C. Numbness
   D. Cyanosis
   E. None of the above

2. The cast should be left to dry for

   A. 16 hours
   B. 24 hours
   C. 36 hours
   D. None of the above

3. To prevent pressure areas you may do all of the following except

   A. Pad edges of cast
   B. Stick sharp instruments down in edges of cast
   C. None of the above

Fill in the Blanks

1. Use ______________ not ______________ to support the wet cast.

2. ________ the patient frequently to permit air circulation to all parts of the cast.

3. While drying, the cast should be __________ (covered, uncovered).

CHECK-OUT ACTIVITIES

The statements below explain the activities you must be able to complete in order to finish this module. After you complete the activities, your evaluator will rate your performance using the Evaluator's Final Checklist, CARE OF THE PATIENT WITH A CAST.

You will be given a patient with a cast and the correct equipment. Perform the required care for the patient according to the following standards.

1. Wash hands.
2. Identify patient and explain procedure.
3. Adjust the bed to correct working level.
4. Check circulation.
    a) Note temperature, color, and movement.
    b) Note any signs of swelling (if present).
5. Check dryness of cast.
6. Check for pressure signs around cast.
7. Finish rough edges (if any exist).
8. Reposition patient, supporting cast in movement.
9. Chart/record the care.

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IV-D-2

Student ____________________

Date ____________________

CARE OF THE PATIENT WITH A CAST

Evaluator's Final Checklist

Check the student's performance in the following elements of care of the patient with a cast.

Place an X in the appropriate box indicating Not Accomplished, Partially Accomplished, or Fully Accomplished. If, because of special circumstances, the item was impossible to complete, place an X in the Not Applicable box.

Performance Level: All items must receive a rating of FULLY ACCOMPLISHED (or Not Applicable). If any items are rated Not Accomplished or Partially Accomplished, the student and evaluator will discuss this and decide which learning activities must be repeated.

When caring for a patient with a cast, the student:

	Student Performance			
	Not Applicable	Not Accomplished	Partially Accomplished	Fully Accomplished
1. Washed hands.	☐	☐	☐	☐
2. Identified patient and explained procedure.	☐	☐	☐	☐
3. Adjusted the bed to correct working level.	☐	☐	☐	☐
4. Checked circulation.				
a) Noted temperature, color, and movement.	☐	☐	☐	☐
b) Noted any signs of swelling (if present)	☐	☐	☐	☐
5. Checked dryness of cast.	☐	☐	☐	☐
6. Checked for pressure signs around cast.	☐	☐	☐	☐
7. Finished rough edges (if any exist).	☐	☐	☐	☐
8. Repositioned patient and supported cast in movement.	☐	☐	☐	☐
9. Charted/recorded the care.	☐	☐	☐	☐

STUDENT SELF-CHECK KEY

True or False

1. False: Skin care is vitally important for patients in cast.
2. True
3. True
4. True
5. True

Multiple Choice

1. A
2. D
3. B

Fill in the Blanks

1. Palm of hands not fingers
2. Turn
3. Uncovered

Module No. IV-E

CIRCULATORY SYSTEM

Module No. IV-E

CIRCULATORY SYSTEM

INTRODUCTION

The circulatory system is the transportation system of the body. Food, oxygen, and other sustances are carried throughout your body tissues by way of your bloodstream. Many of the health assistant skills are performed in order to check the condition and to maintain proper functioning of the body's cardiovascular system. In this module you will learn the structure and function of the circulatory system.

DIRECTIONS

Read the Objective. If you think you are able to perform this task, read the Check-Out Activities. Then either arrange with your evaluator to do the Check-Out Activities,

or

If you need to complete learning activities in order to be able to perform this task, locate the section on Learning Activities and go through them in the order in which they are listed.

OBJECTIVE

Given selected instructional exercises on the circulatory system, you will be able to demonstrate a knowledge of terminology, structure and function of the circulatory system by scoring a minimum of ___ % on a teacher-prepared written examination.

LEARNING ACTIVITIES

1. READ
   a) *Health Assistant,* pages 208-215
   b) *Body Structures and Functions,* pages 38-66
   c) *Basic Sciences for Health Careers,* pages 196-211.

   and/or ______________________________.

2. WRITE a short definition for the terms on Student Assignment Sheet No. 1.

3. VIEW Trainex filmstrips
   a) "How your Heart and Circulation Work"
   b) "Heart: Anatomy I"
   c) "Heart: Anatomy II,"

   and/or ______________________________.

4. DRAW and LABEL model of heart, Figure 30-1, page 201 in *Health Assistant,*

   and/or ______________________________

   Attach your completed work to Student Assignment Sheets.

5. AFTER completing Activity 4, use arrows and TRACE flow of blood through the heart. Mark an "O" by the areas containing oxygenated blood and a "U" in the areas of unoxygenated blood.

6. IDENTIFY the major arteries and veins on Student Assignment Sheet No. 2. Write the correct name of each artery and vein in the blanks provided.

7. NAME and DEFINE 5 diseases or conditions which are related to circulatory system on Student Assignment Sheet No. 3.

8. COMPLETE Student Self-Check. Record your answers on a separate sheet of paper.

9. ARRANGE with your evaluator to complete the module by going through Check-Out Activities.

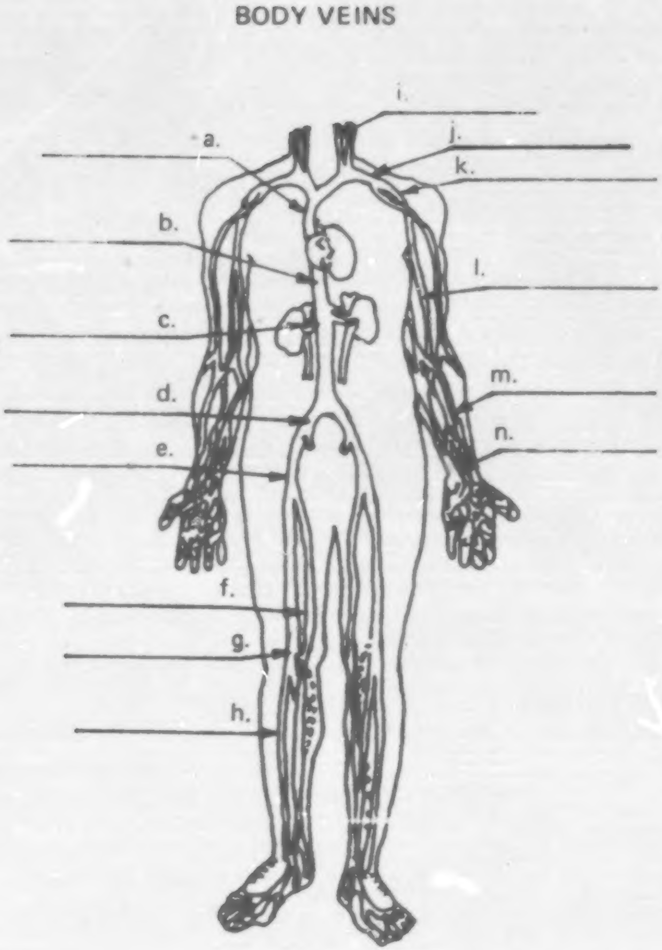
STUDENT ASSIGNMENT SHEET NO. 1 – CIRCULATORY SYSTEM

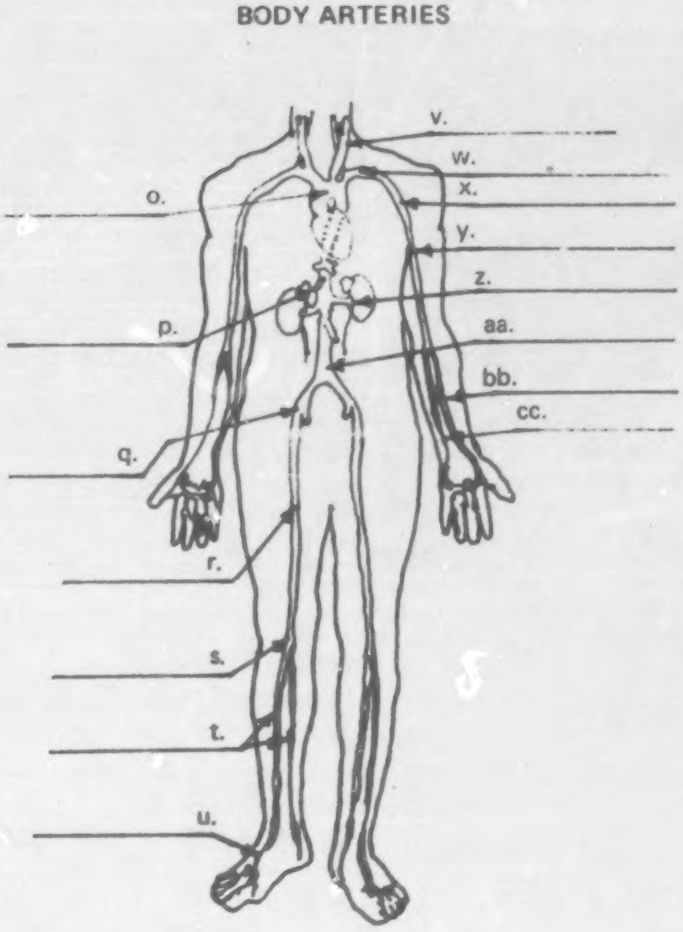
Terminology

1. Vein
2. Artery
3. Lymph
4. Edema
5. Atria
6. Serum
7. Ventricle
8. Spleen
9. Congestive heart failure
10. Myocardial infarction
11. Thrombus
12. Embolus
13. Aorta
14. Erythrocytes
15. Leukocytes
16. Plasma
17. Thrombocytes
18. Arterioles
19. Venules
20. Capillaries
21. CVA
22. Leukemia
23. Arteriosclerosis
24. Anemia
25. Hypertension

STUDENT ASSIGNMENT SHEET NO. 2 — VEINS AND ARTERIES

Identify major arteries and veins on the diagrams below. Write the correct name of each artery and vein in the blanks provided.


BODY VEINS


BODY ARTERIES

STUDENT ASSIGNMENT SHEET NO. 3 – DISEASES OR CONDITIONS RELATED TO CIRCULATORY SYSTEM

Name and define 5 diseases or conditions which are related to the circulatory system.

1. Name:

   Definition:

2. Name:

   Definition:

3. Name:

   Definition:

4. Name

   Definition:

5. Name:

   Definition:

STUDENT SELF-CHECK

1. Cancer of the blood is called ________.

2. Cerebral vascular accident is more commonly called ________ ____.

3. Name the four chambers of the heart.

4. The aorta carries blood to the ________.

5. The pulmonary arteries carry blood to the ________________.

6. Name the three kinds of blood cells.

7. On what specific area of the body would you expect to find the following arteries.

   A. Carotid
   B. Dorsalis pedis
   C. Popliteal
   D. Aorta
   E. Radial

8. List the parts of the heart in the order through which blood flows. Begin with blood flowing from the superior and inferior vena cava and ending with aorta.

   Superior vena cava to } A ________
   Enferior vena cave }

   to B ______ to C ________________
   to D ______ to E ________________
   to F ______ to G ________________
   to H ______ to I ________________
   to J ______ to K ______ aorta ______
   to L body ________________

9. Name 3 diseases or conditions associated with the circulatory system.

10. List signs and symptoms of arteriosclerosis.

CHECK-OUT ACTIVITIES

The statement below explains the activity you must complete in order to finish this module. After you complete the activity, your evaluator will rate your performance using the Evaluator's Final Checklist, CIRCULATORY SYSTEM.

You will be given an examination on the circulatory system. You must score a minimum of ___% on the teacher-prepared written examination.

IV-E

CIRCULATORY SYSTEM

Student ____________________

Date ____________________

Evaluator's Final Checklist

Check the student's performance in the following elements of circulatory system.

Place an X in the appropriate box indicating Not Accomplished, Partially Accomplished, or Fully Accomplished. If, because of special circumstances, the item was impossible to complete, place an X in the Not Applicable box.

Performance Level: All items must receive a rating of FULLY ACCOMPLISHED (or Not Applicable). If any items are rated Not Accomplished or Partially Accomplished, the student and evaluator will discuss this and decide which learning activities must be repeated.

	Student Performance			
	Not Applicable	Not Accomplished	Partially Accomplished	Fully Accomplished
Student scored ____ % on the teacher-prepared written examination	[ ]	[ ]	[ ]	[ ]

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STUDENT SELF-CHECK KEY

1. Leukemia
2. Stroke
3. Right atrium, left atrium, right ventricle, left ventricle
4. Body
5. Lungs
6. Erythrocytes, leukocytes, thromboyctes
7. A. Side of neck
   B. Top of foot
   C. Near the knee
   D. Top of heart
   E. Thumb side of wrist
8. A. Right atrium
   B. tricupsid valve
   C. Right ventricle
   D. pulmonary artery
   E. lungs
   F. pulmonary veins
   G. left atrium
   H. miltral valve
   I. Left ventricle
   J. aortic semilunar valve
9. Any of the following are acceptable.

   A. Congestive heart failure
   B. Coronary heart attack
   C. Angina pectoris
   D. Hypertension
   E. Arteriosclerosis
   F. CVA
   G. Anemia
   H. Leukemia
10. Decrease in circulation, coldness, tingling, loss of sensitivity, headaches, dizziness and memory lapses

Module No. IV-E-1

"CPR" CARDIOPULMONARY RESUSCITATION

"CPR" – CARDIOPULMONARY RESUSCITATION

INTRODUCTION

A knowledge of first aid and cardiopulmonary resuscitation (CPR) is very important to the health assistant. This knowledge may mean the difference between life and death or between temporary and permanent injuries. A basic knowledge of first aid principles and CPR allows one to handle an emergency effectively. Since accidents are the number one cause of death, this knowledge is useful in any life situation (at work, school, home, or play.)

DIRECTIONS

In order to complete this module you will need:

1. Training manikin equipped with "breathing" and "heartbeat" devices
2. Partner (may be another student)

Before beginning this module be certain that you have completed or reviewed modules II-B and II-C on measuring pulse and respiration. You should also review modules X-C and X-D on performing mouth to mouth resuscitation and relieving obstructed airways *(Health Occupations Education I)*.

Read the Objective. If you think you are able to perform this task, read the Check-Out Activities. Then either arrange with your evaluator to do the Check-Out Activities,

or

If you need to complete learning activities in order to be able to perform this task, locate the section of Learning Activities and go through them in the order in which they are listed.

OBJECTIVE

Given a training manikin in which an unwitnessed cardiac arrest has occured,you will be able to perform perfectly one-rescuer and two-rescuer CPR. This procedure will be evaluated in accordance with the American Red Cross method of CPR. (Refer to Evaluator's Final Checklist at conclusion of module.)

LEARNING ACTIVITIES

1. READ *American Red Cross CPR Module,* 1980 edition, pages 2-1 through 3-25,

   and/or ______________________________.

2. READ Student Information Sheets Nos. 1-11. Sheets Nos. 3-7 will be provided by your instructor.

3. READ *Nursing Skills for Allied Health Services,* "Cardiopulmonary Resuscitation," pages 738-751.

4. COMPLETE Student Self-Check: CPR—Questions. Record your answers on a separate sheet of paper.

5. VIEW Trainex filmstrips:
   a) "Cardiopulmonary Resuscitation: A Second Chance for Life"
   b) "Cardiopulmonary Resuscitation: Technique for One Rescuer"
   c) "Cardiopulmonary Resuscitation: Technique for Two Rescuers"
   d) "Cardiopulmonary Resuscitation: Technique for Infants and Children."

   and/or ______________________________.

6. COMPLETE Student Self-Check: CPR Multiple Choice. Record your answers on a separate sheet of paper.

7. PRACTICE on manikin one-rescuer CPR and two-rescuer CPR (with a partner).

8. ARRANGE with your evaluator to complete this module by going through the Check-Out Activities.

STUDENT INFORMATION SHEET NO. 1 – CPR

The lungs and heart work together; the air which is breathed into the lungs provides oxygen for the blood. The heart pumps the blood providing oxygen for the brain and the rest of the body. If a person stops breathing, the heart may continue beating for a short period of time. In this case, mouth to mouth breathing is needed. If an illness or injury makes the heart stop beating (cardiac arrest), breathing will stop also. In this case CPR (cardiopulmonary resuscitation) is needed.

In cardiopulmonary resuscitation, *cardio* refers to the heart and *pulmonary* refers to the lungs. CPR is the combining of mouth-to-mouth breathing (which you demonstrated in module X-C, Health Occupations Education I) and chest compressions. By giving CPR, you breathe (sending oxygen to the lungs) and give chest compressions (circulating blood) to keep a person's heart and lungs working.

The following are the most common signals that someone is having a heart attack.

1. Person experiences feelings of uncomfortable pressure, squeezing, fullness or pain in the center of the chest. Some persons think they are having severe indigestion.
2. Pain may travel from chest to shoulders, arms, neck, and jaw.
3. Other signals are sweating, nausea, shortness of breath, and a feeling of weakness.

Anyone who has persistent signals of a heart attack should get medical care at once and be taken to a hospital immediately.

STUDENT INFORMATION SHEET NO. 2 – HIGH RISK FACTORS

These are some factors which are known to increase the risk of heart attack or are strongly suspected of contributing to the risk of a heart attack.

1. Hypertension – high blood pressure. If your blood pressure is above normal, get medical help in reducing it.
2. Obesity – overweight. If you are overweight, reduce safely.
3. Smoking – Smoking is a major contributor to heart and artery disease as well as to lung cancer.
4. Diet – Diets high in saturated fats and cholesterol should be avoided. Large amounts of salt and sugar are also harmful.
5. Medical check-ups – Get regular check-ups to identify possible risk factors such as high blood pressure and diabetes.

The first step in performing CPR is to give "A Quick Check."

A – Airway– Establish open airway.

Quick – Give four quick full breaths.

Check – Check the pulse and breathing. Check pulse for at least 5 seconds. You may count "one–one thousand, two–one thousand. . . .

If the victim has a heartbeat but is not breathing, give mouth-to-mouth breathing or first aid for obstructed airway. Check the pulse frequently. If victim has neither pulse nor breathing, begin CPR. Be sure to call for help. You should memorize your local EMS (Emergency Medical Service) telephone number.

STUDENT INFORMATION SHEETS NOS. 3-7

The instructor will copy and distribute pages HSC-91-B (Sheet No. 3), HSC-92-B (Sheet No. 4), HSC-93-B (Sheet No. 5), HSC-94-B and 95-B (Sheet No. 6), and HSC-96-B (Sheet No. 7) from *Health Occupations Education: Health Service Centers* (Stillwater, Oklahoma: State Department of Vocational and Technical Education).

STUDENT INFORMATION SHEET NO. 8 – COMBINING CHEST COMPRESSIONS AND MOUTH-TO-MOUTH BREATHING FOR THE ONE-RESCUER CPR

In one-rescuer CPR, give 15 compressions at a rate of 80 per minute and then give 2 quick breathes without a pause. Keep repeating 15 compressions, 2 breaths; 15 compressions, 2 breaths . . . Each time you begin the 15 compressions, be sure to quickly measure the notch on the victim's chest as instructed. After you have given CPR for about a minute, stop to check the pulse and breathing. After this point, check once every few minutes right after giving breaths. Do not stop CPR for more than 5 seconds to check pulse and breathing. Start back by giving breaths first and then compressions.

If you are alone, call aloud for help and give CPR for one minute. Then, if no help has arrived and you are near other people or a telephone, quickly seek help. You must decide whether to risk pausing in CPR or to risk never getting help while giving CPR. The purpose of CPR is to keep the victim alive until medical help is obtained or until the heart and lungs start working again. In most cases when CPR is needed, the victim must be moved to a medical facility while CPR is being given in order to survive.

STUDENT INFORMATION SHEET NO. 9 – COMBINING CHEST COMPRESSIONS AND MOUTH-TO-MOUTH BREATHING FOR THE TWO-RESCUER CPR

In two-rescuer CPR, one person compresses the chest at a steady rate of 60 per minute (one per second). The other rescuer gives one breath after every fifth compression.

This diagram shows compressions (C) and breaths (B) for two-rescuer CPR.

Compressions C C C C C C C C C C C C C C C C C C C C
Seconds 1 –2 –3–4–5 – 1– 2–3–4–5 – 1 –2 –3 –4 –5 –1–2–3 –4–5
Breaths B B B

It is easier to time the breaths if the person giving compressions counts aloud, "One, one thousand; three, one thousand; four, one thousand; five, BREATHE," etc.

You have a half second to give a breath between one compression and the next. Blow hard and fast, at just the right time, because the person giving compressions should not slow down to allow more time for breaths.

Get ready to blow before the count of 5. Start blowing early, on the count of 5, because it takes a little time for your air to reach the victim's lungs. Try to blow hard enough to raise the other rescuer's hands; i.e., make the chest rise. Continue the breath until the next compression starts, then remove your mouth and get ready for the next count of 5. You may miss a breath because you started too late or make a poor seal. If you miss, don't wait until the next count of 5. Give a breath between compressions as soon as you can.

If you get out of order, it doesn't matter at which number you give the breath as long as you give *at least* one breath every 5 compressions.

STUDENT INFORMATION SHEET NO. 10 – CHANGING FROM ONE-RESCUER CPR TO TWO-RESCUER CPR

Two-rescuer CPR is more effective than one-rescuer CPR. Therefore, if one-person CPR is started, two-rescuer CPR should be started as soon as a second qualified rescuer becomes available.

When a second rescuer comes on the scene, this rescuer lets the first rescuer know that he/she is qualified and willing to help. Without stopping CPR, the first rescuer agrees to accept help and the second rescuer checks pulse *during* compressions to find out if the compressions are circulating blood. After finding the pulse, the second rescuer asks the first rescuer to stop compressions. The second rescuer continues to check pulse (for no more than a 5-second pause) to see if CPR is still needed, and also checks breathing. If there is no pulse or breathing, the second rescuer gives one breath and says, "No pulse, continue CPR." You and first rescuer then perform two-rescuer CPR.

If there is pulse but not breathing, the second rescuer says, "There is a pulse. I'll give mouth-to-mouth breathing." The first rescuer should check the pulse frequently and be ready to take over when the rescuer giving mouth-to-mouth breathing needs to rest.

Once two-rescuer CPR is started, rescuers may change places. The person giving compressions says, "Change, one thousand; two, one thousand; three, one thousand . . ." The rescuer giving breaths gives a breath as usual on the count of 5 and then gets in position to give compressions. The rescuer who has been giving compressions moves to the victim's head and checks the pulse and breathing. (Pause no more than 5 seconds.) The rescuer waiting to give compressions should not start until the rescuer checking pulse and breathing gives the signal, which is the same as when switching from one-rescuer to two-rescuer CPR. The rescuer at the head should check pulse during compressions every few minutes to be sure compressions are circulating blood.

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STUDENT INFORMATION SHEET NO. 11 – BASIC STEPS FOR ONE-RESCUER CPR

1. Approach the victim. Check consciousness. Tap the victim's shoulder firmly and shout, "Are you O.K.?"
2. If the victim does not respond, shout "HELP!" to get attention of people who may be able to help you.
3. If the victim is unconscious, check for breathing. Use your judgment as to whether to position the victim on back (may have injury preventing this). If possible, place on back by rolling entire body at once without twisting. Quickly do "A Quick Check."
4. If the victim is not breathing but has a pulse; rescuer shouts, "Has pulse; someone call for help!" Rescuer then gives mouth-to-mouth breathing, one breath every 5 seconds.
5. If the victim is not breathing and does not have a pulse, rescuer says, "No breathing, no pulse! Someone call for help!" Rescuer then gives two breaths and 15 compressions and continues until help arrives.

Basic Steps for Two-rescuer CPR

Same as 1-5 above. Begin with two-person CPR or change from one-rescuer to two-rescuer as directed in previous information sheets.

STUDENT SELF-CHECK

CPR Questions

Answer the following 4 items related to CPR.

1. What does cardiopulmonary mean?

2. List the 5 signs of a heart attack that a person may experience.

3. Name 4 factors which may increase a person's risk of having a heart attack.

4. When does a cardiac arrest occur?

STUDENT SELF CHECK

CPR Multiple Choice

Choose the best response for the following questions.

1. A person needs CPR; a rescue squad will arrive in a few minutes. You should:

   A. Start CPR right away.
   B. Watch the victim carefully but wait for the rescue squad.

2. CPR should be given until:

   A. You know that an ambulance is on the way.
   B. Another person takes over, or the heart starts to beat.

3. In two-rescuer CPR, a breath is given:

   A. Between two compressions while compressions are given at a steady rate.
   B. While the rescuer giving compressions stops and waits for the breath.

4. When two rescuers give CPR to an adult, at what rate is the chest compressed?

   A. 100 compressions per minute
   B. 80 compressions per minute
   C. 60 compressions per minute

5. When should rescuers who are giving two-rescuer CPR change positions?

   A. Every 30 seconds
   B. Every minute
   C. When a rescuer gets tired, or every few minutes when a pulse check is needed

6. You should give chest compressions:

   A. With a quick jerk.
   B. Smoothly and regularly.

7. For the compression to be effective, the victim must be on a:

   A. Soft surface.
   B. Hard surface.

8. In one-rescuer CPR, what is the pattern of compressions and breaths?

   A. 5 compressions, then one breath
   B. 5 compressions, then two breaths
   C. 15 compressions, then one breath
   D. 15 compressions, then two breaths

9. How long do you check the pulse before deciding whether or not CPR is needed?

   A. 1 to 3 seconds
   B. 3 to 5 seconds
   C. 5 seconds
   D. 10 to 20 seconds

10. A seond rescuer who is going to help give two-rescuer CPR should check the pulse:

    A. Both during compressions and after compressions have been stopped.
    B. Only during compressions.
    C. Only after compressions have been stopped.

11. The best way to find out if a person has stopped breathing is to:

    A. Check the pulse.
    B. Check the pupils of the eyes.
    C. Look at the chest; listen and feel for air coming out of the mouth.

12. How often do you give breaths to an adult in mouth-to-mouth breathing after you give 4 quick breaths?

    A. Once every second
    B. Once every 5 seconds
    C. Once every 3 seconds

13. "A Quick Check" stands for:

    A ______________________
    Quick ______________________
    Check ______________________

CHECK-OUT ACTIVITIES

The statements below explain the activities you must be able to complete in order to finish this module. After you complete the activities, your evaluator will rate your performance using the Evaluator's Final Checklist, CARDIOPULMONARY RESUSCITATION. Remember all items must rate "Fully Accomplished."

You will be given a teaching manikin and a partner. Perform one-rescuer CPR and two-rescuer CPR for an adult victim. You must perform perfectly according to the following procedure which reflects the American Red Cross method of CPR.

1. Call for hlep.
2. After checking for injuries, turn victim on back.
3. Open airway properly and perform "A Quick Check."
4. With victim's breathing absent, give four full quick breaths; then check carotid pulse for 5 seconds.
5. With victim's breathing and pulse absent, maintain external chest compressions.
    a) Position self correctly by victim's chest.
    b) Properly place heel of hand in chest.
    c) Exert firm force downward without bending elbows.
    d) Give 15 compressions to two breaths until second rescuer arrives. Count aloud.
6. When second rescuer approaches, both begin two-rescuer CPR correctly and smoothly without stopping CPR other than to check the pulse.
7. With beginning of two-rescuer CPR, give one breath on the 5th compression.
8. Keep timing regular and give approximately 60 compressions in one minute for two-rescuer CPR.

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Student ____________________

Date ____________________

CARDIOPULMONARY RESUSCITATION

Evaluator's Final Checklist

Check the student's performance in the following elements of cardiopulmonary resuscitation.

Place an X in the appropriate box indicating Not Accomplished, Partially Accomplished, or Fully Accomplished. If, because of special circumstances, the item was impossible to complete, place an X in the Not Applicable box.

Performance Level: All items must receive a rating of FULLY ACCOMPLISHED (or Not Applicable). If any items are rated Not Accomplished or Partially Accomplished, the student and evaluator will discuss this and decide which learning activities must be repeated.

When performing CPR the student:

	Student Performance			
	Not Applicable	Not Accomplished	Partially Accomplished	Fully Accomplished
1. Called for help.	☐	☐	☐	☐
2. After checking for any injuries, turned victim on back.	☐	☐	☐	☐
3. Opened airway properly and performed "A Quick Check."	☐	☐	☐	☐
4. With victim's breathing absent, gave four full quick breaths then checked carotid pulse for 5 seconds	☐	☐	☐	☐
5. With victim's breathing and pulse absent, maintained external chest compressions.				
a) Positioned self correctly by victim's chest.	☐	☐	☐	☐
b) Properly placed heel of hand in chest.	☐	☐	☐	☐
c) Exerted firm force downward without bending elbows.	☐	☐	☐	☐
d) Gave 15 compressions to two breaths until second rescuer arrived. Counted aloud.	☐	☐	☐	☐
6. Worked with second rescuer to begin two-rescuer CPR correctly and smoothly without stopping CPR other than to check pulse.	☐	☐	☐	☐
7. Gave one breath on the 5th compression when two-rescuer CPR started.	☐	☐	☐	☐
8. Kept timing regular and gave approximately 60 compressions in one minute for two-rescuer CPR.	☐	☐	☐	☐

STUDENT SELF-CHECK KEY

CPR – Questions

1. *Cardio* refers to the heart and *pulmonary* refers to the lungs.

2. Any of the following: uncomfortable pressure; squeezing; fullness or pain in center of chest; severe indigestion; pain radiating from chest to shoulders, arms, neck and jaw; sweating; nausea; shortness of breath; feeling of weakness

3. Hypertension, obesity, smoking, improper diet or irregular checkups

4. Cardiac arrest occurs when the heart has stopped beating and blood is not circulating through the body.

CPR – Multiple Choice

1. A
2. A
3. A
4. C
5. C
6. B
7. B
8. D
9. C
10. A
11. C
12. B
13. A - airway

    Quick - 4 quick full breaths

    Check – Check pulse and breathing

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Module No. IV-F

RESPIRATORY SYSTEM

INTRODUCTION

Every living cell of the body requires oxygen to remain alive and carry out life functions. The respiratory system is sometimes referred to as the *life-line* of the body. Any illness or disease that interfers with the vital exchange of oxygen and carbon dioxide may bring about acute distress in patients. In this module you will learn about the structure, function, and terminology associated with the respiratory system.

DIRECTIONS

Read the Objective. If you think you are able to perform this task, read the Check-Out Activities. Then either arrange with your evaluator to do the Check-Out Activities,

or

If you need to complete learning activities in order to be able to perform this task, locate the section on Learning Activities and go through them in the order in which they are listed.

OBJECTIVE

Given selected instructional exercises on the respiratory system, you will be able to demonstrate a knowledge of the terminology, structure, and function of this system by scoring a minimum of ___% on a teacher-prepared written examination.

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LEARNING ACTIVITIES

1. READ
   a) *Health Assistant,* pages 199-207
   b) *Basic Sciences for Health Careers,* pages 177-187
   c) *Body Structures and Functions,* pages 67-68,

   and/or ______________________.

2. WRITE a short definition for the terminology listed on Student Assignment Sheet No. 1.

3. VIEW Trainex filmstrips
   a) "Physiology of Respiration"
   b) "Respiratory System, Digestive System and Special Senses,"

   and/or ____________________.

4. DRAW and LABEL a diagram of the respiratory tract. If available, refer to *Health Assistant,* page 200, Figure 19-1. Attach completed work to Student Assignment Sheet No. 1.

5. COMPLETE Student Self-Check. Record your answers on a separate sheet of paper.

6. ARRANGE with your evaluator to complete this module by going through the Check-Out Activities.

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STUDENT ASSIGNMENT SHEET NO. 1 – RESPIRATORY SYSTEM

Terminology

1. Alveoli
2. Dyspnea
3. Diaphragm
4. Hemoptysis
5. Emphysema
6. Inspiration
7. Trachea
8. Pharynx
9. Expiration
10. Bronchi
11. Bronchioles
12. Larynx
13. Thoracic cavity
14. Tuberculosis

STUDENT SELF CHECK

Fill in the Blanks

A. The voice box is called the______.

B. Small tubes placed at the entrance to the nose to allow the patient to receive oxygen are called ____ ______.

C. A term used for difficult breathing is _____.

D. ________respiration occurs with the exchange of gases between the cells and lymph surrounding them and energy release in cells.

E. ________respiration occurs with the inhalation of oxygen and exhalation of carbon dioxide.

F. The principal waste product of exhalation is ____________ ____________.

G. When the diaphragm moves______, inhalation takes place.

H. The two positions used in respiratory distress are ______and ____________.

I. The two purposes of respiration are to (1) ______ ________and (2) _______.

J. Another word for throat is the_____

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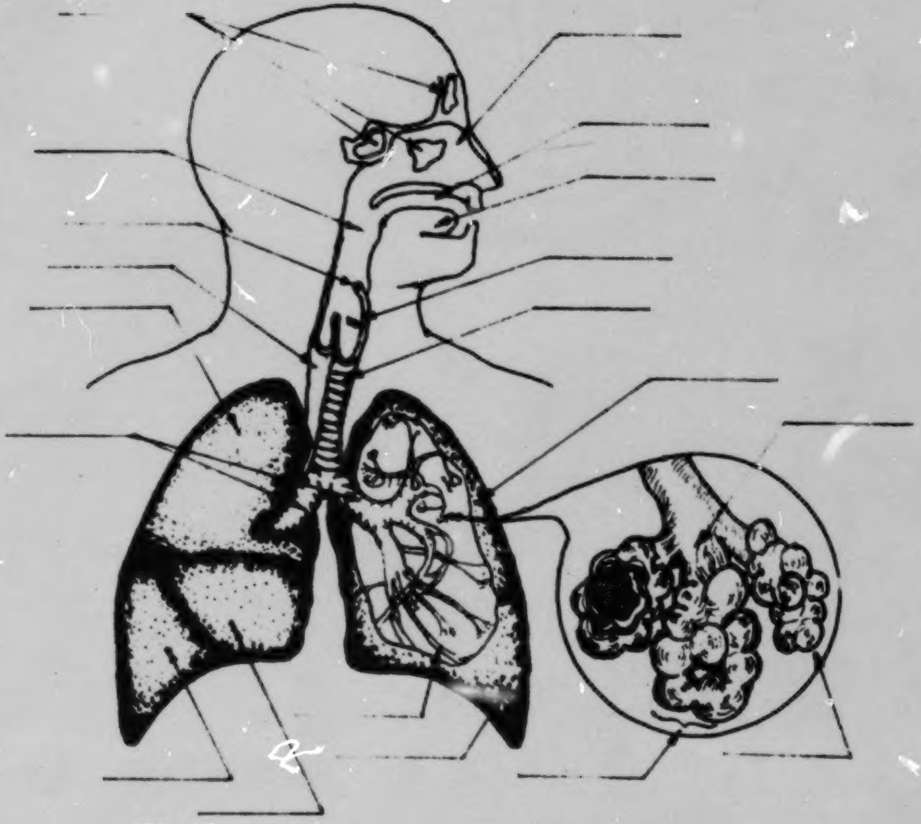
Label the following diagram of the respiratory tract.



CHECK-OUT ACTIVITIES

The statement below explains the activity you must complete in order to finish this module. After you complete the activity, your evaluator will rate your performance using the Evaluator's Final Checklist, RESPIRATORY SYSTEM.

You will be given an examination on the respiratory system. You must score a minimum of___% on the teacher-prepared written examination.

IV-F

Student ______________________

RESPIRATORY SYSTEM

Date ______________________

Evaluator's Final Checklist

Check the student's performance in the following elements of respiratory system.

Place an X in the appropriate box indicating Not Accomplished, Partially Accomplished, or Fully Accomplished. If, because of special circumstances, the item was impossible to complete, place an X in the Not Applicable box.

Performance Level: All items must receive a rating of FULLY ACCOMPLISHED (or Not Applicable). If any items are rated Not Accomplished or Partially Accomplished, the student and evaluator will discuss this and decide which learning activities must be repeated.

Student scored _____% on the teacher-prepared written examination.

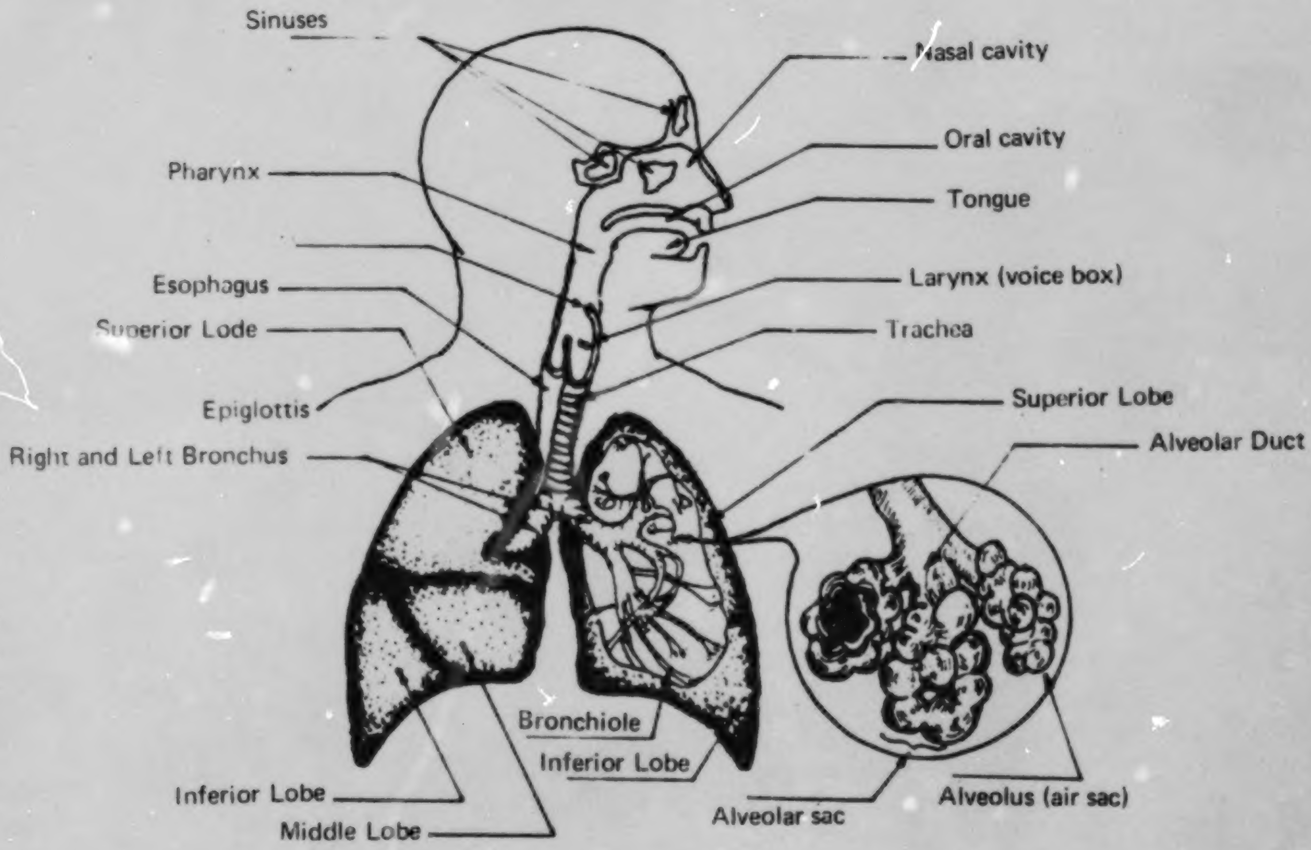
Student Performance			
Not Applicable	Not Accomplished	Partially Accomplished	Fully Accomplished
[ ]	[ ]	[ ]	[ ]

STUDENT SELF-CHECK KEY

Fill in the Blanks

A. Larynx
B. Nasal cannula
C. Dyspnea
D. Internal
E. External
F. Carbon dioxide
G. Downward
H. Orthopneic, high Fowler's
I. To bring oxygen into the body; to remove carbon dioxide from the body
J. Pharynx

Key for Labeling Diagram



Module No. IV-F-1

CARE OF THE PATIENT RECEIVING OXYGEN

Module No. IV-F-1

CARE OF THE PATIENT RECEIVING OXYGEN

INTRODUCTION

Oxygen is vital for life. When a patient is not able to receive an adequate amount of oxygen through breathing, it becomes necessary for oxygen to be administered. Oxygen can be dangerous to patients if it is not administered properly. In this module you will learn how to care for the patient receiving oxygen.

DIRECTIONS

In order to complete this module you will need to have completed Module IV-F, *Respiratory System.* You will also need:

1. Patient or training manikin
2. Physician's orders
3. Necessary equipment and supplies to administer oxygen

Read the Objective. If you think you are able to perform this task, read the Check-Out Activities. Then either arrange with your evaluator to do the Check-Out Activities,

or

If you need to complete learning activities in order to be able to perform this task, locate the section on Learning Activities and go through them in the order in which they are listed.

OBJECTIVE

Given selected instructional exercises, a patient, physician's orders, and essential equipment and supplies, you will be able to administer oxygen to the patient. The procedure will be performed with complete accuracy according to a pre-established list of 9 tasks. (Refer to Evaluator's Final Checklist at conclusion of module.)

LEARNING ACTIVITIES

1. READ
   a) *Health Assistant,* "Respiratory System" and "Oxygen Administration," pages 199-207
   b) *Nursing Skills for Allied Health Services,* "Oxygen Therapy," pages 523-539,

   and/or ______________________.

2. READ and STUDY information sheets provided by your instructor.

3. COMPLETE Student Self-Check: Terminology. Record your answers on a separate sheet of paper.

4. VIEW Trainex filmstrip "Oxygen Administration."

5. COMPLETE Student Self-Check: Discussion Questions. Record your answers on a separate sheet of paper.

6. PRACTICE administering oxygen to manikin or with student partner. Don't turn on oxygen with student!

7. ARRANGE with your evaluator to complete this module by going through the Check-Out Activities.

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STUDENT SELF-CHECK

Terminology

Match the terms in Column A with their definitions in Column B.

COLUMN A

1. Hypoxemia
2. Nebulizer
3. Dyspnea
4. Vertigo
5. Expiration
6. IPPB
7. Anoxia
8. Inspiration
9. Respiration
10. Atelectasis
11. Hypoxia
12. Cyanotic
13. Nasal cannula
14. Humidifier
15. Syncope

COLUMN B

A. A deficiency of oxygen

B. Difficult or labored respiration

C. Breathing air from the lungs

D. An apparatus used to increase the moisture content of the air

E. Low oxygen content in the blood

F. Low oxygen content in the tissues

G. The act of breathing air in the lungs

H. A tube of rubber or plastic used to give oxygen through the nose

I. An atomizer or sprayer

J. The act of breathing

K. Fainting

L. Dizziness

M. Intermittent positive pressure therapy

N. Bluish in color, lack of oxygen

O. Lack of air in the lungs due to blockage of small bronchial tubes

STUDENT SELF-CHECK

Discussion Questions

1. Define the following terms.

   A. Nasal catheter
   B. Canopy (hood)
   C. Anoxia
   D. Liter
   E. Oxygen

2. List 2 conditions that may require oxygen therapy.

3. Name 3 methods for giving oxygen.

4. List 4 safety factors to be practiced when oxygen is being used.

5. Why is smoking prohibited when oxygen is being used?

6. List 5 points of nursing care to provide for the comfort of the patient receiving oxygen therapy.

7. How often should a nasal catheter be changed?

8. Why should the oxygen tubing not be kinked?

CHECK-OUT ACTIVITIES

The statements below explain the activities you must be able to complete in order to finish this module. After you go through the activities, your evaluator will rate your performance using the Evaluator's Final Checklist, CARE OF THE PATIENT RECEIVING OXYGEN.

You will be given a patient, physician's orders, and essential equipment and supplies. You will administer oxygen to the patient according to the following procedure.

1. Check physician's order.
2. Wash hands and assemble equipment.
3. Identify patient and explain procedure.
4. Place "No Smoking" sign and instruct patient and visitors.
5. Connect tubing, flowmeter, and humidifier to tank or outlet properly and test functioning of equipment.
6. Adjust oxygen flow as prescribed.
7. Adjust cannula, mask, or catheter to fit patient snuggly, but comfortably.
8. Make patient as comfortable as possible.
9. Record procedure.

IV-F-1

Student ____________

Date ____________

CARE OF THE PATIENT RECEIVING OXYGEN

Evaluator's Final Checklist

Check the student's performance in the following elements of care of the patient receiving oxygen.

Place an X in the appropriate box indicating Not Accomplished, Partially Accomplished, or Fully Accomplished. If, because of special circumstances, the item was impossible to complete, place an X in the Not Applicable box.

Performance Level: All items must receive a rating of FULLY ACCOMPLISHED (or Not Applicable). If any items are rated Not Accomplished or Partially Accomplished, the student and evaluator will discuss this and decide which learning activities must be repeated.

	Student Performance			
When administering oxygen, the student:	Not Applicable	Not Accomplished	Partially Accomplished	Fully Accomplished
1. Checked physician's orders.	[ ]	[ ]	[ ]	[ ]
2. Washed hands and assembled equipment.	[ ]	[ ]	[ ]	[ ]
3. Identified patient and explained procedure.	[ ]	[ ]	[ ]	[ ]
4. Placed "No Smoking" sign and instructed patient and visitors.	[ ]	[ ]	[ ]	[ ]
5. Connected tubing, flowmeter, and humidifier to tank or outlet properly and tested functioning of equipment.	[ ]	[ ]	[ ]	[ ]
6. Adjusted oxygen flow as prescribed.	[ ]	[ ]	[ ]	[ ]
7. Adjusted cannula, mask, or catheter to fit patient snuggly but comfortably.	[ ]	[ ]	[ ]	[ ]
8. Made patient as comfortable as possible.	[ ]	[ ]	[ ]	[ ]
9. Recorded procedure.	[ ]	[ ]	[ ]	[ ]

STUDENT SELF-CHECK KEY

Terminology

A.	7
B.	[illegible]
C.	5
D.	14
E.	1
F.	11
G.	8
H.	13
I.	2
J.	9
K.	15
L.	4
M.	6
N.	12
O.	10

Discussion Questions

1. A. A plastic device which is inserted into the patient's nostril to administer oxygen
   B. An airtight enclosure which is placed over the patient's head and shoulder
   C. Inadequate amount of oxygen
   D. Unit of measure used in measuring oxygen
   E. Tasteless, odorless, colorless gas

2. A. Lung infection such as pneumonia
   B. Congestive heart failure

3. A. Oxygen tent
   B. Nasal cannula
   C. Mask
   D. Nasal catheter

4. A. Start oxygen and make sure apparatus is functioning properly before connecting to patient.
   B. Administer only the amount of oxygen ordered.
   C. Always instruct family members and visitors not to smoke and place a "No Smoking" sign on the door and at the patient's bed.
   D. Check on your patient frequently.

5. Oxygen supports combustion

6. A. Frequent mouth care
   B. Alternate nostrils if possible when changing the catheter
   C. Frequent care of nostrils
   D. Good body alignment
   E. Check your oxygen flow frequently

7. At least every eight hours

8. A kinked catheter will cause the flow of oxygen to be decreased.

TRACHEOSTOMY CARE

TRACHEOSTOMY CARE

INTRODUCTION

As a health assistant, you will be caring for patients with tracheostomies. A tracheostomy is a traumatic procedure for the patient. It is important that you understand the operative procedure and post-operative care in order to give the safest and most comforting care to the patient. In this module you will learn how to care for the patient with a tracheostomy.

DIRECTIONS

In order to complete this module you will need to have completed Module IV-F, *Respiratory System* and Module IV-F-4, *Suctioning Nasal Passage and Throat.* You will also need:

1. Manikin or patient with tracheostomy
2. Tracheostomy care kit or necessary supplies
3. Suction machine and apparatus
4. 4 x 4 compresses and dressing
5. Sterile gloves

Read the Objective. If you think you are able to perform this task, read the Check-Out Activities. Then either arrange with your evaluator to do the Check-Out Activities,

or

If you need to complete learning activities in order to be able to perform this task, locate the section on Learning Activities and go through them in the order in which they are listed.

OBJECTIVE

Given selected instructional exercises, a patient or training manikin with a tracheostomy, physician's orders, and the necessary equipment and supplies, you will be able to:

1. Perform the removal, cleaning, and replacement of the inner cannula. The opening must be maintained throughout the procedure and the inner cannula must be free of secretions, crust and lint when replaced.
2. Perform the suctioning of the tracheostomy.
   All secretions must be removed and an open airway maintained throughout the procedure.

LEARNING ACTIVITIES

1. READ *Health Assistant*, "Anatomy of Respiratory Tract," pages 199-206,

   and/or ______________________ .

2. READ and STUDY Student Information Sheets Nos. 1 and 2.

3. COMPLETE Student Assignment Sheet No. 1.

4. VIEW Trainex filmstrips
   a) "Tracheostomy Care"
   b) "Tracheostomy Care – The Cuffed Tube,"

   and/or ______________________ .

5. COMPLETE Student Self-Check. Record your answers on a separate sheet of paper.

6. PRACTICE cleaning and suctioning a tracheostomy on training manikin.

7. ARRANGE with your evaluator to complete this module by going through the Check Out Activities.

STUDENT INFORMATION SHEET NO. 1 – CARING FOR THE TRACHEOSTOMY

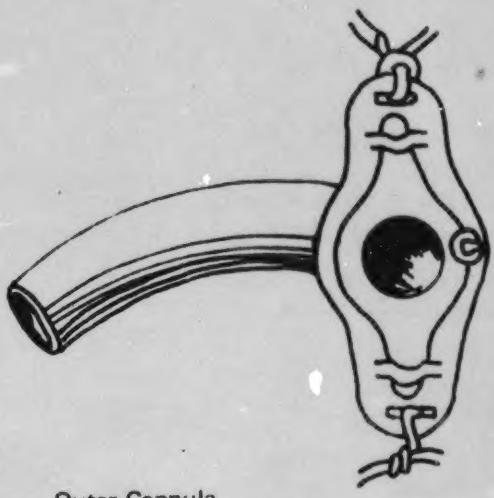
A tracheostomy is a surgical opening made into the trachea. It may be a permanent or temporary opening.

Permanent tracheostomies are usually done as treatment for cancer of the larynx.

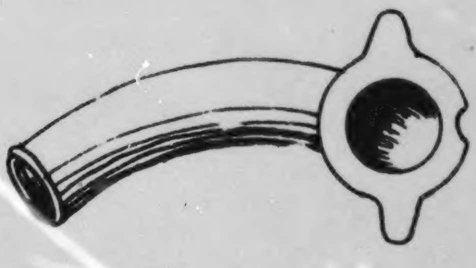
Temporary tracheostomies are usually done to relieve respiratory distress in an emergency.

Once the opening is made, a tube is inserted to keep this area open which enables the patient to breath. Tracheostomy tubes are either man-made synthetics or sterling silver. They range in size from No. 00 to No. 10. The tube is composed of three parts - an outer cannula, an inner cannula, and an obturator. See Illustration No. 1.

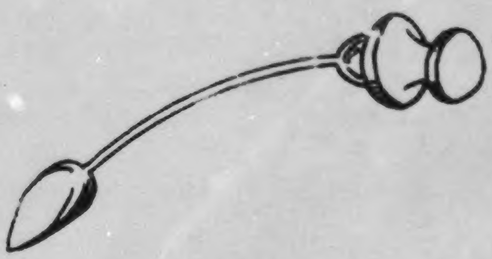
Illustration No. 1



Outer Cannula



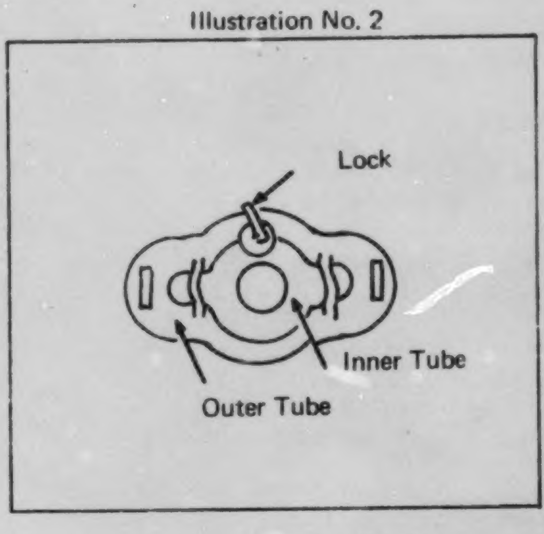
Inner Cannula



Obturator

The inner cannula (tube) slides inside the outer cannula (tube) and is locked in place as shown in Illustration No. 2.

Illustration No. 2

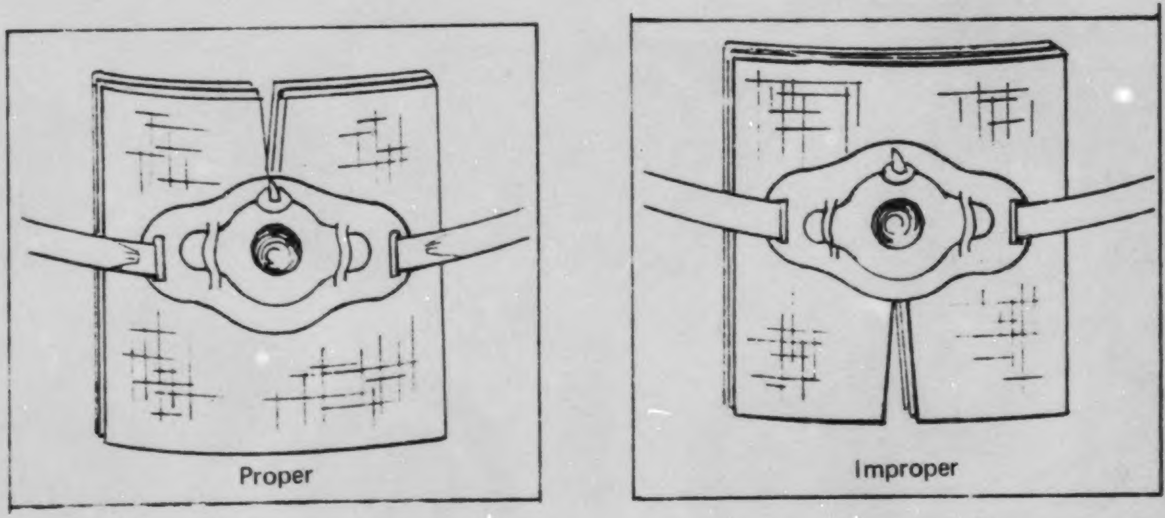


When cleaning use sterile technique. Remove inner cannula and soak in cool solution of half water and half hydrogen peroxide. A small brush or pipe cleaner may be used to clean inside the cannula. Rinse well and dry. Suction outer cannula in patient before reinserting the inner cannula. Apply dressing as demonstrated below.

The obturator is an olive-tipped curbed rod that is used to guide the outer cannula as it is inserted into the tracheal incision. This apparatus is always kept close to the patient's bed in case of an accidental expulsion of the outer cannula. In this case the obturator is used to insert another tube immediately.

When inserting the tracheostomy tube, a sterile dressing is applied. This dressing, slit so that it fits around the tube, is used to absorb secretions and reduce irritations. Proper placement of this dressing is very important so that the gauze will not be aspirated into the tube obstructing the air passage for the patient. Illustration No. 3 compares the proper and improper placement of the sterile dressing.

Illustration No. 3



Proper

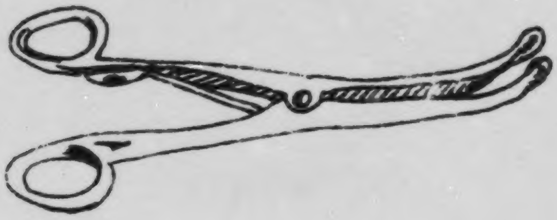
Improper

The sterile dressing must be changed whenever the tube is suctioned and/or secretions have soiled the dressing. This is generally changed every 8 hours.

Twill tape as shown in Illustration No. 3 is used to secure the outer cannula in place. The tape is attached to either side of the outer cannula and is brought around the patient's neck and tied. This prevents accidental removal or misplacement of the outer cannula.

If and when the outer cannula is accidentally expelled due to violent coughing and/or improperly tied twill tapes, a tracheal dilator or a pair of hemostats are used to hold the tracheostomy open while another apparatus is inserted (see Illustration No. 4).

Illustration No. 4



TRACHEAL DILATOR

Clean or sterile technique should be followed throughout the procedure. This will prevent the introduction of any pathogenic organisms to the area which may cause an infection to occur.

STUDENT INFORMATION SHEET NO. 2 – PROCEDURE FOR SUCTIONING A TRACHEOSTOMY

The procedure for suctioning a tracheostomy includes the following seven steps.

1. Use *Sterile Technique* always!

2. Lubricate catheter with normal saline. Use sterile cup and sterile saline. This facilitates the passage of the suction catheter.

3. Pass tube through tracheostomy tube (inner cannula) 4 to 8 inches unless contraindicated and gradually open suction.

4. Remove catheter when patient coughs.

5. Have tissue ready to catch any secretions that might be expelled.

6. Rotate catheter between thumb and forefinger. Move it up and down gently as it is withdrawn with suction on.

7. *Do not* suction patient more than 15 seconds at a time. Rest at least 3 minutes between suctioning.

Note: If tracheostomy is type with inflated cuff, check with your instructor about care of this cuff. Since tracheostomy care is not practiced by health assistants in all hospitals, be certain that this procedure is part of your job description.

Psychological Care of Patient with Tracheostomy

1. Recognize that the patient is normally apprehensive, particularly about choking and about his/her ability to communicate.

2. Explain and demonstrate all procedures carefully to the patient.

3. Inform the patient and his/her family that he/she will not be able to speak. Determine with the patient the best method of communication such as sign language, writing, etc. Supply patient with note pad, chalk and slate, or "magic slate."

4. Be sure call bell is always within the patient's reach. Put note on intercom at nurse's station that patient can't speak and call light must be answered in person. Never talk through intercom to tracheostomy patient.

5. Check on patient frequently.

STUDENT ASSIGNMENT SHEET NO. 1 – TRACHEOSTOMY

Discussion Questions

1. What is a tracheostomy?

2. What is the obturator?
   Why should it be kept at a patient's bedside?

3. Draw a diagram showing how a sterile dressing is applied around the tracheostomy.
   Why is it important to put the dressing on properly?

4. Why are a pair of tracheal dilaters or hemostats kept at the bedside of a patient with a tracheostomy?

5. What would you do if an outer cannula was accidentally expelled?

6. How often is the sterile dressing around the tracheostomy normally changed?

7. What holds the outer cannula in place?

8. Why do you use sterile technique in caring for tracheostomies?

STUDENT SELF-CHECK

True or False

1. You should lubricate the suction catheter with vaseline so that it will pass easier in the inner cannula of the tracheostomy.

2. Tracheostomy patients are not able to talk.

3. Sterile technique is always used when doing any care for or around the tracheostomy.

4. When you suction a tracheostomy, have the suction on as you pass the catheter in the inner cannula.

5. Do not suction more than 30 seconds at a time.

6. Permanent tracheostomies are usually performed to relieve respiratory distress in an emergency.

7. An obturator is used to help clean secretions out of the inner cannula.

8. Proper placement of the sterile gauze is important so that the gauze will not be aspirated into the tube cutting off the air passage.

9. The dressing is put around the tracheostomy to absorb secretions and reduce irritations.

10. The twill tape is used to secure the outer cannula in place.

11. The sterile dressing is usually changed once every 24 hours.

12. A tracheal dilator or a pair of hemostats are kept at the bedside in order to hold the tracheostomy open while another apparatus is inserted if needed.

13. It is possible for the patient to accidently expel the outer cannula.

14. A tracheostomy is a surgical opening into the trachea and may be permanent or temporary.

CHECK-OUT ACTIVITIES

The statements below explain the activities you must be able to complete in order to finish this module. As you complete the activities, your evaluator will rate your performance using the Evaluator's Final Checklist, TRACHEOSTOMY CARE.

You will be given a patient or training manikin with a tracheostomy, physician's order, and essential equipment and supplies. You will remove, clean, and replace the inner cannula according to the following procedure.

1. Identify patient and explain procedure.
2. Wash hands and set up equipment using sterile equipment.
3. Remove, cleanse, and replace the inner cannula free of secretions, crust, and lint.
4. Maintain the opening throughout the procedure.
5. Report/chart results properly.

You will be given a patient or training manikin with a tracheostomy, physician's order, and essential equipment and supplies. You will suction the tracheostomy according to the following procedure.

1. Use sterile technique.
2. Remove all secretions.
3. Maintain an open airway throughout the procedure.
4. Report/chart results properly.

TRACHEOSTOMY CARE

Student ____________________

Date ____________________

Evaluator's Final Checklist

Check the student's performance in the following elements of tracheostomy care.

Place an X in the appropriate box indicating Not Accomplished, Partially Accomplished, or Fully Accomplished. If, because of special circumstances, the item was impossible to complete, place an X in the Not Applicable box.

Performance Level: All items must receive a rating of FULLY ACCOMPLISHED (or Not Applicable). If any items are rated Not Accomplished or Partially Accomplished, the student and evaluator will discuss this and decide which learning activities must be repeated.

	Student Performance			
	Not Applicable	Not Accomplished	Partially Accomplished	Fully Accomplished
When removing, cleaning, and replacing the inner cannula, the student:				
1. Identified patient and explained procedure.	[ ]	[ ]	[ ]	[ ]
2. Washed hands, set up equipment, using sterile equipment.	[ ]	[ ]	[ ]	[ ]
3. Removed, cleansed, and replaced the inner cannual free of secretions, crusts and lint.	[ ]	[ ]	[ ]	[ ]
4. Maintained the opening throughout the procedure.	[ ]	[ ]	[ ]	[ ]
5. Reported/charted results properly.	[ ]	[ ]	[ ]	[ ]
When suctioning the tracheostomy, the student:				
1. Used sterile technique.	[ ]	[ ]	[ ]	[ ]
2. Removed all secretions.	[ ]	[ ]	[ ]	[ ]
3. Maintained an open airway throughout the procedure	[ ]	[ ]	[ ]	[ ]
4. Reported/charted results properly.	[ ]	[ ]	[ ]	[ ]

STUDENT SELF-CHECK KEY

True or False

1. False
2. True
3. True
4. False
5. False
6. False
7. False
8. True
9. True
10. True
11. True
12. False
13. True
14. True
15. True

COLLECTION OF SPUTUM SPECIMEN

COLLECTION OF SPUTUM SPECIMEN

INTRODUCTION

It may be necessary to obtain specimens of sputum from the coughing patient to aid in the diagnosis and treatment of disease. Sputum specimens are requested most often from patients who are suspected of having a respiratory disease such as pneumonia, tuberculosis, or bronchitis. Collection of the sputum specimen is an important skill performed frequently by the health assistant.

DIRECTIONS

In order to complete this module you will need:

1. Container and cover for specimen
2. Glass of water
3. Tissues
4. Emesis basin
5. Label for container and laboratory slip
6. Patient's chart
7. Volunteer patient (classmate)
8. Physician's orders

Read the Objective. If you think you are able to perform this task, read the Check-Out Activities. Then either arrange with your evaluator to do the Check-Out Activities,

or

If you need to complete learning activities in order to be able to perform this task, locate the section on Learning Activities and go through them in the order in which they are listed.

OBJECTIVE

Given selected instructional exercises, a patient, necessary equipment, patient's chart, and laboratory slip, you will be able to:

1. Collect a sputum specimen without contamination.
2. Identify the sputum specimen with complete accuracy.
3. Prepare the specimen to be sent to the laboratory.
   The container must be labeled with complete accuracy.
   The laboratory slip must be prepared with complete accuracy.

LEARNING ACTIVITIES

1. READ *Nursing Skills for Allied Health Services,* "Collection of the Spectum Specimen," pages 547-548, "Procedure for Collection of Sputum Specimen," page 87,

   and/or ______________________________ .

2. COMPLETE Student Self-Check. Record your answers on a separate sheet of paper.
3. PRACTICE collection of sputum specimen.
4. ARRANGE with your evaluator to complete this module by going through the Check-Out Activities.

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STUDENT SELF-CHECK

True or False

1. You should have the patient rinse out his/her mouth after giving you a sputum specimen.
2. A profuse amount of sputum would be a large amount.
3. Ask the patient to bring up the sputum from the back of his throat.
4. It is easier for the patient to produce the sputum specimen just before he goes to bed.
5. The time of collection should be recorded on the label that goes with the sputum specimen.
6. Sputum is the same thing as saliva.
7. You should ask the patient to cover his/her mouth with tissue when coughing.
8. You need to collect 1 to 2 teaspoons of sputum unless otherwise instructed.
9. Hemoptysis is a term to describe sputum which contains blood.
10. If there is any delay in delivering the sputum specimen to the laboratory, it should be stored in the refrigerator used for specimens.

CHECK-OUT ACTIVITIES

The statements below explain the activities you must be able to complete in order to finish this module. After you complete the activities, your evaluator will rate your performance using the Evaluator's Final Checklist, COLLECTION OF SPUTUM SPECIMEN.

You will be given a patient, physician's order, a laboratory slip, and necessary equipment and supplies. You must be able to perform the following tasks involved in the collection of a sputum specimen.

1. Identify the patient and explain procedure.
2. Collect specimen without contamination.
3. Correctly label the container.
4. Correctly prepare the laboratory slip.
5. Record description of the sputum specimen.

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IV-F-3

Student ______________________

COLLECTING OF SPUTUM SPECIMEN

Date ______________________

Evaluator's Final Checklist

Check the student's performance in the following elements of collection of sputum specimen.

Place an X in the appropriate box indicating Not Accomplished, Partially Accomplished, or Fully Accomplished. If, because of special circumstances, the item was impossible to complete, place an X in the Not Applicable box.

Performance Level: All items must receive a rating of FULLY ACCOMPLISHED (or Not Applicable). If any items are rated Not Accomplished or Partially Accomplished, the student and evaluator will discuss this and decide which learning activities must be repeated.

When collecting the sputum specimen, the student:

	Student Performance			
	Not Applicable	Not Accomplished	Partially Accomplished	Fully Accomplished
1. Properly identified patient and explained procedure.	[ ]	[ ]	[ ]	[ ]
2. Collected specimen without contamination.	[ ]	[ ]	[ ]	[ ]
3. Correctly labeled the container.	[ ]	[ ]	[ ]	[ ]
4. Correctly prepared the laboratory slip.	[ ]	[ ]	[ ]	[ ]
5. Recorded accurate description of sputum.	[ ]	[ ]	[ ]	[ ]

STUDENT SELF-CHECK KEY

1. False
2. True
3. False
4. False
5. True
6. False
7. True
8. False
9. True
10. True

Module No. IV-F-4

SUCTIONING NASAL PASSAGE AND THROAT

SUCTIONING NASAL PASSAGE AND THROAT

INTRODUCTION

Normal, regular breathing is essential to life. When a patient is not able to cough up mucus that accumulates in the nose, throat, or mouth, suctioning becomes necessary. In this module you will learn how to restore clear breathing by suctioning the upper respiratory passages.

DIRECTIONS

In order to complete this module you will need to have completed Module IV-F, *Respiratory System*. You will also need:

1. Patient or training manikin
2. Physician's orders
3. Essential suctioning equipment

Read the Objective. If you think you are able to perform this task, read the Check-Out Activities. Then either arrange with your evaluator to do the Check-Out Activities,

or

If you need to complete learning activities in order to be able to perform this task, locate the section on Learning Activities and go through them in the order in which they are listed.

OBJECTIVE

Given selected instructional exercises on suctioning, a patient, physician's orders, and essential equipment, the student will be able to suction the nasal passage and/or throat. The passage suctioned must be free of mucus upon completion of the procedure and the procedure must be performed in a safe manner without causing undue harm to the patient.

LEARNING ACTIVITIES

1. READ and STUDY Student Information Sheets Nos. 1, 2 and 3.
2. COMPLETE Student Self-Check. Record your answers on a separate sheet of paper.
3. OBSERVE instructor operating suctioning equipment.
4. PRACTICE suctioning on a training manikin.
5. ARRANGE with your evaluator to complete this module by going through the Check-Out Activities.

STUDENT INFORMATION SHEET NO. 1 – SUCTIONING RESPIRATORY PASSAGES

Definitions

Suction – The mechanical removal of excessive secretions

Nasopharyngeal suctioning – The removal of secretions by suctioning the nose and pharynx

Oropharyngeal suctioning – The removal of secretions by suctioning the mouth and throat

Pharynx – The common passageway for food and air: the pharynx or throat is the area extending from the back of the nose and mouth to the back of the larynx

Pharyngeal suctioning – Includes suction of *all three of these areas* but does not include the larynx

Indications for Suctioning

1. Any interference with cough reflex which normally clears the air passage of mucus such as anesthesia, semi-consciousness or unconsciousness
2. Increased mucus production and inability to expectorate or swallow the secretions
3. The sound of bubbling or rattling in the throat which indicates the accumulation of secretions in the throat

Nursing Alert

1. Identify those patients who are likely to require suctioning.
2. Be alert to signs of respiratory embarrassment such as pallor, cyonosis, rattling sound in throat, and dyspnea with rib retraction.
3. Have equipment ready for immediate use as indicated by patient's symptoms.

STUDENT INFORMATION SHEET NO. 2 – NASOPHARYNGEAL SUCTIONING

Equipment

- Portable suction pump with suction tubing or available wall suction outlet with attachments
- Sterile plastic or rubber French catheter, size 12 to 16
- Glass "Y" connector or thumb control suction valve to control negative pressure within tubing
- Sterile gloves
- Water-soluble jelly to lubricate catheter, if necessary
- Tongue blades
- Rinse solution (distilled water or normal saline) and a disposable cup for solution

Note: Generally the procedure is carried out using medical asepsis. Only in specific cases are sterile techniques used.

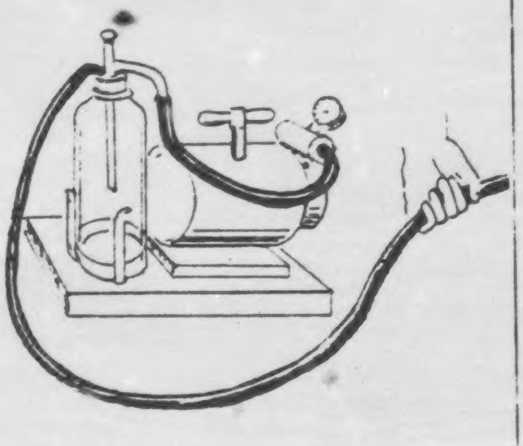
Nursing Action

1. Assemble all equipment and supplies.

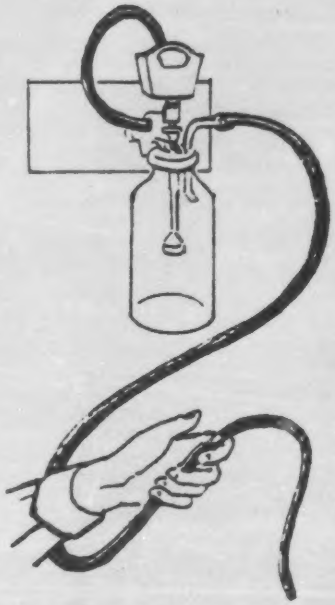
2. Wash your hands.

3. Identify the patient; provide for the patient's privacy; and explain the complete procedure.

4. Test the patency of the suction tubing by running some solution through it.



Portable Suction



Wall - Mounted Suction

5. Explain to the patient about the noise created by the suction machine.

6. Position patient in a Semi-Fowler's position unless contraindicated. This is most comfortable for the patient and provides the most unobstructed view of the nose and/or mouth.

7. Put on gloves.

8. Select a catheter with a thumb control valve.

   a) Use a size 12 or 14F for a nasopharyngeal suctioning; 14 to 16F for an oral suctioning.
   b) Attach a "Y" connector if the catheter does not have a thumb control valve.

9. Check the operation of the suction equipment.

   a) When the catheter is connected to the suction equipment, covering the finger control vent makes a negative pressure suction at the tip of the catheter.
   b) Opening the vent (removing your finger) permits air to enter through the vent, thus interrupting the suction.

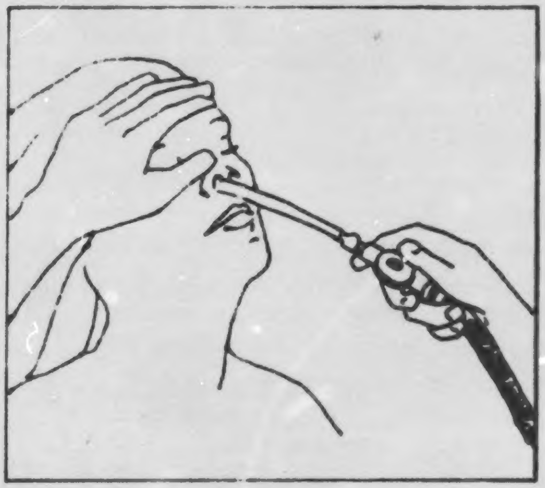
10. Measure catheter for insertion for the nasopharyngeal suctioning.

    a) On the catheter measure the distance from the tip of the patient's nose to the lobe of the ear.
    b) This assures that the catheter will not be inserted beyond the pharynx.

11. Lubricate the catheter tip for ease of inserting through the nostril.

12. Insert the catheter into the right nostril for 3 to 5 inches. (Usually there are fewer septal deviations in the right nostril.)

    a) If you meet an obstruction, remove the catheter and insert it into the left nostril.
    b) If an obstruction is found in the left nostril, remove the catheter and call for assistance.



13. After the catheter has passed through the nasal passage, close the suction valve or the open "Y" with your thumb.

14. Rotate the catheter.

    a) If patient's cough reflex is stimulated, withdraw the catheter until the coughing stops. (Coughing can aid in bringing up secretions.)
    b) Reinsert catheter and proceed suctioning.

15. Withdraw the catheter.

    a) Remove slowly using a rotating motion so that all surfaces of the pharynx are exposed to the suction.
    b) Keep your thumb over the suction valve as you rotate the catheter out of the pharynx. However, do not keep your finger over the suction valve for more than 15 seconds at a time.

16. Rinse the catheter with rinse solution until the solution runs clear through the catheter.

17. Repeat the suctioning of right naris and left naris as indicated, cleansing the catheter as in Step 16 after each aspiration.

18. Instruct the patient to cough if the patient is able to cooperate.

19. Reinsert the catheter into each nostril to remove additional secretions. Suction periods should be brief. Allow the patient to rest between suctionings.

20. Remove the catheter and rinse it to clear the tubing.

21. Turn off the suction unit.

22. Leave the patient comfortable.

    a) Change or straighten the linens as needed.
    b) Give oral care.
    c) Leave the call light within reach.
    d) Adjust the bed and raise the side rails.

23. Remove all soiled items.

    a) Replace the suction catheter with a clean catheter so that it will be ready for the next use.
    b) Empty the suction jar and replenish the cleansing solution as needed.

24. Record the procedure on patient's chart including:

    a) Time
    b) Procedure performed
    c) Amount of secretion obtained
    d) Appearance and odor

STUDENT INFORMATION SHEET NO. 3 – OROPHARYNGEAL SUCTIONING

Nursing Action

Follow steps listed in Student Information Sheet No. 2, making the following procedural adjustments.

1. Select a 14 to 16 French catheter.
2. Follow the same procedure as for nasopharyngeal suctioning; however, the catheter is introduced through the mouth instead of the nostrils.
3. If the patient is unconscious, you may need to depress the patient's tongue with tongue blades so that you have good access to the entire oral cavity.
4. Sometimes oral pharyngeal suctioning is done to induce coughing so that bronchial and laryngeal secretions are coughed up into the pharynx where the suction catheter can reach them.

Note: Do not interchange catheters. Use separate catheters for the nose and mouth.

STUDENT SELF-CHECK

True or False and Completion

1. Sterile technique is essential in suctioning the patient.
2. You close the suction valve while inserting and withdrawing the catheter.
3. Mechanical stimulation of the cough reflex occurs more readily in oral suctioning than in nasopharyngeal suctioning.
4. Suctioning should be brief (no more than 15 seconds).
5. You should place patient in Semi-Fowler's position.
6. Mouth care is essential following the suction procedure.
7. Determine the approximate depth to which the catheter is inserted by measuring the distance from the tip of the _______ to the ______ .
8. List 3 signs of airway obstruction.

CHECK-OUT ACTIVITIES

The statement below explains the activity you must be able to complete in order to finish this module. After you complete the activity, your evaluator will rate your performance using the Evaluator's Final Checklist, SUCTIONING NASAL PASSAGE AND THROAT.

You will be given a patient, physician's orders, and the essential suctioning equipment. You will suction the nasal passage and throat according to the following procedure.

1. Clear the passageway free of mucus.
2. Perform the procedure in a safe manner without causing undue harm to the patient.
3. Chart results of the procedure, including type of mucus obtained and patient tolerance.

Student ______________________

Date ______________________

Evaluator's Final Checklist

Check the student's performance in the following elements of suctioning nasal passage and throat.

Place an X in the appropriate box indicating Not Accomplished, Partially Accomplished, or Fully Accomplished. If, because of special circumstances, the item was impossible to complete, place an X in the Not Applicable box.

Performance Level: All items must receive a rating of FULLY ACCOMPLISHED (or Not Applicable). If any items are rated Not Accomplished or Partially Accomplished, the student and evaluator will discuss this and decide which learning activities must be repeated.

	Student Performance			
	Not Applicable	Not Accomplished	Partially Accomplished	Fully Accomplished
When suctioning the nasal passage, the student:				
1. Cleared the passageway free of mucus.	( )	( )	( )	( )
2. Performed the procedure in a safe manner without causing undue harm to the patient.	( )	( )	( )	( )
3. Charted results of the procedure, including type of mucus obtained and patient tolerance.	( )	( )	( )	( )
When suctioning the throat, the student:				
1. Cleared the passageway free of mucus.	( )	( )	( )	( )
2 Performed the procedure in a safe manner without causing undue harm to the patient.	( )	( )	( )	( )
3. Charted results of the procedure, including type of mucus obtained and patient tolerance.	( )	( )	( )	( )

STUDENT SELF-CHECK KEY

True or False

1. False (Generally medical asepsis is used.)
2. False (Close the suction valve after the catheter has passed through the nasal passage.)
3. True
4. True
5. True
6. True
7. Nose, ear
8. Pallor, cyanosis, dyspnea with rib retraction, gurgling or rattling sounds in throat

DIGESTIVE SYSTEM

DIGESTIVE SYSTEM

INTRODUCTION

All food taken into the body must be changed into a form within the body which can be used by the cells. The process of changing this food into a useable substance by the body is called digestion. Digestion is accomplished through the cooperative efforts of a variety of body organs and glands. There are many procedures performed by the health assistant that affect the digestive system; therefore, the health assistant needs to have an understanding of the digestive system.

DIRECTIONS

Read the Objective. If you think you are able to perform this task, read the Check-Out Activities. Then either arrange with your evaluator to do the Check-Out Activities,

or

If you need to complete learning activities in order to be able to perform this task, locate the section on Learning Activities and go through them in the order in which they are listed.

OBJECTIVE

Given selected instructional exercises on the digestive system, you will be able to demonstrate a knowledge of the terminology and the principles of anatomy and physiology related to the digestive system by scoring a minimum of ____% on a teacher-prepared written examination.

LEARNING ACTIVITIES

1. READ
    a) *Health Assistant*, "Gastrointestinal System, pages 240-247
    b) *Body Structures and Functions*, pages 79-94
    c) *Basic Sciences for Health Careers*, pages 240-250,

    and/or ______________________.

2. WRITE a short definition for the terminology listed on Student Assignment Sheet No. 1.

3. ANSWER briefly but thoroughly the questions on Student Assignment Sheet No. 2.

4. VIEW Trainex filmstrips
    a) "Physiology of the Lower Gastrointestional Tract"
    b) "Physiology of the Upper Gastrointestional Tract"
    c) "Respiratory System, Digestive System and Special Senses,"

    and/or ______________________.

5. DRAW and LABEL the digestive organs on Student Assignment Sheet No. 3.

6. POINT OUT the digestive organs on a torso model in your classroom, if available.

7. COMPLETE Student Self-Check. Record your answers on a separate sheet of paper.

8. ARRANGE with your evaluator to complete this module by going through the Check-Out Activities.

STUDENT ASSIGNMENT SHEET NO. 1 – DIGESTIVE SYSTEM

Write a short definition for the following terms.

1. Mastication
2. Pylorus
3. Enzyme
4. Alimentary canal
5. Digestion
6. Chyme
7. Peristalsis
8. Colostomy
9. Colon
10. Gall bladder
11. Obstruction
12. Gastric
13. Gastrointestinal
14. Hydrochloric acid
15. Enema
16. G.I. series
17. Diarrhea
18. Liver
19. Villi
20. Gingivae

STUDENT ASSIGNMENT SHEET NO. 2 – DIGESTIVE SYSTEM

Answer the following questions related to the digestive system.

1. Name the organs of the alimentary canal.
2. Name the accessory organ associated with digestion.
3. Discuss what happens in the following organs that aids in digestion.
    - A. Mouth
    - B. Pharynx
    - C. Esophagus
    - D. Stomach
    - E. Small intestine
    - F. Large intestine
4. What do the following organs do to aid in digestion?
    - A. Liver
    - B. Gall bladder
5. Name and define 5 disorders of the digestive sytem.
6. List the organs in the order through which a piece of food would pass in the digestion process. Begin with the mouth and end with the rectum.

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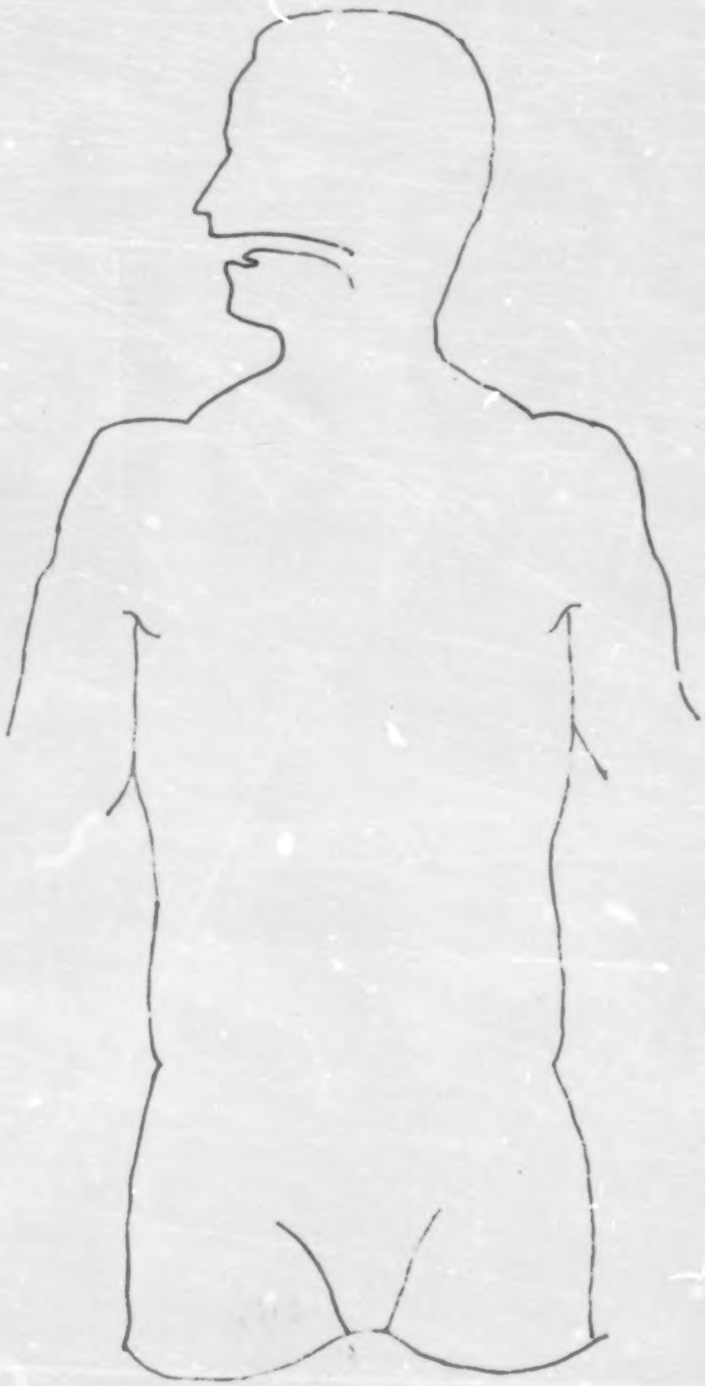
STUDENT ASSIGNMENT SHEET NO. 3 – THE DIGESTIVE ORGANS

Draw and label the digestive organs.



STUDENT SELF-CHECK

Terminology

Match the terms in Column A with their definitions in Column B.

COLUMN A

1. Papillae
2. Alimentary canal
3. Gingivae
4. Stomach
5. Duodenum
6. Chyme
7. Villi
8. Gall bladder
9. Liver
10. Colon
11. Large intestine
12. Enzyme
13. Obstruction
14. Peristalsis
15. Pancreas

COLUMN B

A. Another word for gums

B. Semi-liquid food

C. Storehouse for bile

D. Another word for large intestine

E. Chemical which aids in digestion

F. Projections on tongue which contain taste buds

G. Blocking of a passageway

H. Tiny projections lining the small intestine which aid in absorption of food

I. Insulin produced here

J. Concerned with storage and excretion of the waste products of digestion

K. Lining of this organ contains thousands of gastric glands

L. Rhythmic contractions

M. Bile manufactured here

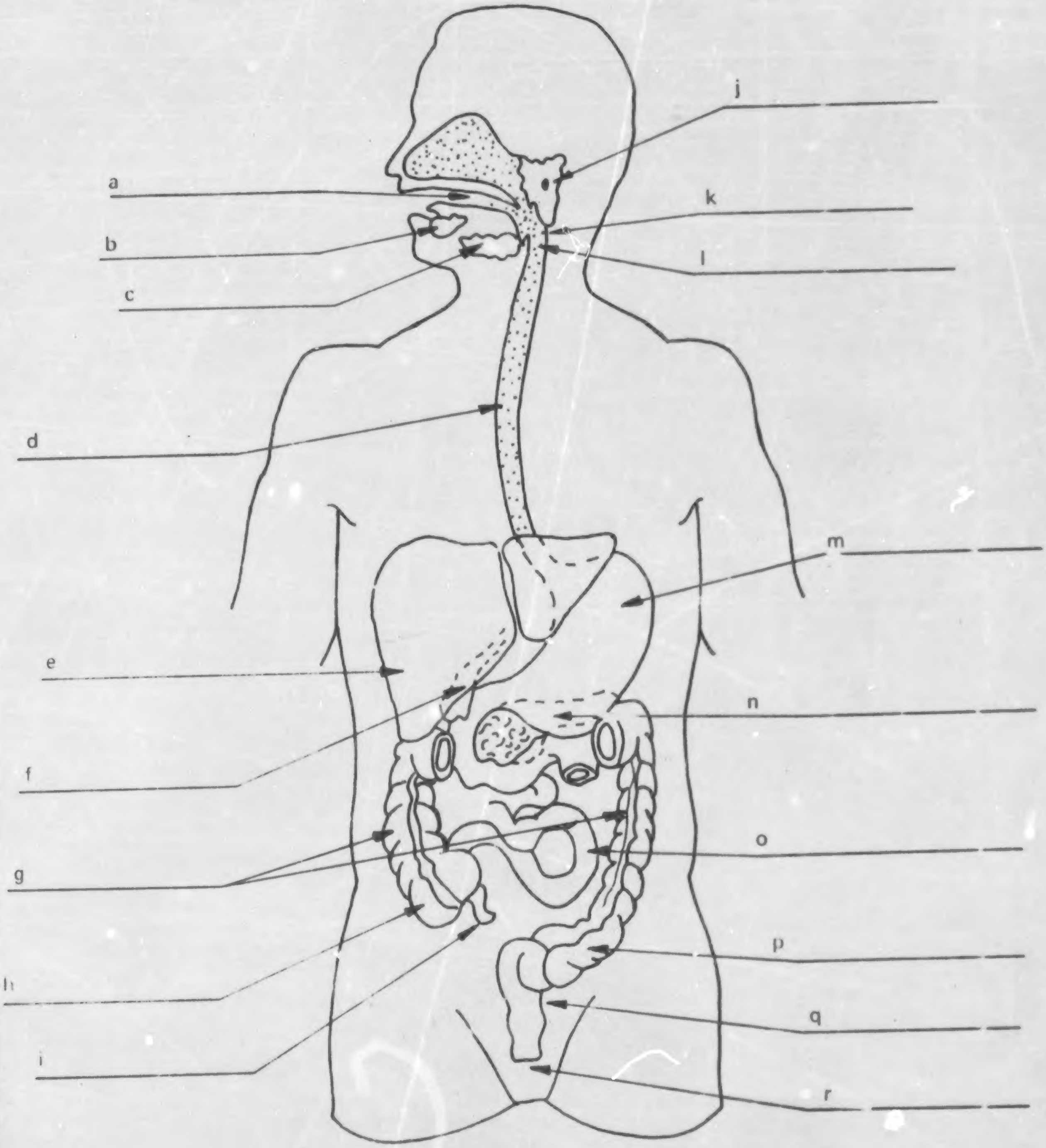
N. 30 - 40 ft. canal through which food passes during digestion

O. First part of the small intestine

STUDENT SELF-CHECK

Identification

Label the digestive organs on the following diagram.



CHECK-OUT ACTIVITIES

The statement below explains the activity you must be able to complete in order to finish this module. After you go through the activity, your evaluator will rate your performance using the Evaluator's Final Checklist, DIGESTIVE SYSTEM.

You will be given an examination on the digestive system. You will be expected to score a minimum of ____% on the teacher-prepared written examination.

IV-G

Student ____________________

Date ____________________

DIGESTIVE SYSTEM

Evaluator's Final Checklist

Check the student's performance in the following elements of the digestive system.

Place an X in the appropriate box indicating Not Accomplished, Partially Accomplished, or Fully Accomplished. If, because of special circumstances, the item was impossible to complete, place an X in the Not Applicable box.

Performance Level: All items must receive a rating of FULLY ACCOMPLISHED (or Not Applicable). If any items are rated Not Accomplished or Partially Accomplished, the student and evaluator will discuss this and decide which learning activities must be repeated.

The student scored _____% on the teacher-prepared written examination.

Student Performance			
Not Applicable	Not Accomplished	Partially Accomplished	Fully Accomplished
☐	☐	☐	☐

STUDENT SELF-CHECK KEY

Terminology

1. F
2. N
3. A
4. K
5. O
6. B
7. H
8. C
9. M
10. D
11. J
12. E
13. G
14. L
15. I

Identification

A. Oral cavity (mouth)

B. Sublingual gland

C. Submandibular gland

D. Esophagus

E. Liver

F. Gall bladder

G. Colon

H. Cecum

I. Appendix

J. Parotid gland

K. Pharynx

L. Epiglottis

M. Stomach

N. Pancreas

O. Small intestine

P. Sigmoid

Q. Rectum

R. Anal canal

Module No. IV-G-1

COLOSTOMY CARE

COLOSTOMY CARE

INTRODUCTION

The health assistant (level 3 or technician) plays an important part in helping the patient with a colostomy adjust to his/her altered physical and emotional situation. In this module you will learn how to care for the colostomy.

DIRECTIONS

Before you begin this module, you should have completed Module IV-G, *Digestive System* and Module IV-G-2, *Bowel Elimination.* In order to complete this module you will need:

1. Patient with simulated colostomy (may be student or manikin)
2. Colostomy appliance
3. Ointment
4. Adhesive
5. Physician's orders
6. Irrigation materials

Read the Objective. If you think you are able to perform this task, read the Check-Out Activities. Then either arrange with your evaluator to do the Check-Out Activities,

or

If you need to complete learning activities in order to perform this task, locate the section on Learning Activities and go through them in the order in which they are listed.

OBJECTIVE

Given selected instructional exercises on colostomy care, a patient with a colostomy, physician's orders, and necessary equipment, you will be able (1) to change the colostomy or dressing bag, and (2) to perform a colostomy irrigation. The soiled dressing or bag must be removed; the stoma must be cleansed and inspected for irritation; a clean dressing or bag must be applied to cover the stoma; and a colostomy irrigation must be performed.

LEARNING ACTIVITIES

1. READ *Nursing Skills for Allied Health Services*, pages 410-415,

   and/or ______________________________.

2. STUDY Student Information Sheets Nos. 1-6.

3. VIEW Trainex filmstrips "Colostomy Care" and "Colostomy Irrigation,"

   and/or ______________________________.

4. COMPLETE Student Self-Check. Record your answers on a separate sheet of paper.

5. PRACTICE applying and removing colostomy bags.

6. ARRANGE with your evaluator to complete this module by going through the Check-Out Activities.

STUDENT INFORMATION SHEET NO. 1 – COLOSTOMY CARE

Terminology

Adhesion – Abnormal growing together of tissue following operation or trauma

Anatomosis – A surgical end to end union of two hollow body parts

Colectomy – Surgical removal of all or part of the large intestine

Colitis – Inflammation of the colon or large intestine

Colostomy – The extension of the last half of the large intestine through the abdominal wall to allow for the expulsion of the feces, or the routing of waste materials through an artificial opening on the abdominal wall

Diverticulum – (to turn aside) a sac or pouch in the walls of a canal or organ, especially the colon

Diverticulitis – Inflammation of a diverticulum causing stagnation of feces in little distended sacs of the colon

Double-barrel colostomy – Bowel segment is completely severed and both the distal and proximal loop are protruding through the abdominal wall. This method is used for the temporary colostomy and for the first stage of a two-stage permanent colostomy.

Excoriation – The removal of pieces of skin as a result of scraping or rubbing away

Flatus – Gas expelled from the gastrointestinal tract

Karaya – A natural gum substance used to heat and protect periostomal and peridrainage skin

Orifice – Any opening into the body

Ostomate – Refers to person with an ostomy

Ostomy – Opening into the body by surgical means

Stenosis – A decrease in diameter, as in a stoma

Stoma – An opening or mouth – artifically created between body cavity and the body's surface

Volvulus – A twisting of the bowel upon itself causing an obstruction

STUDENT INFORMATION SHEET NO. 2 – COLOSTOMY CARE AND CONSIDERATIONS

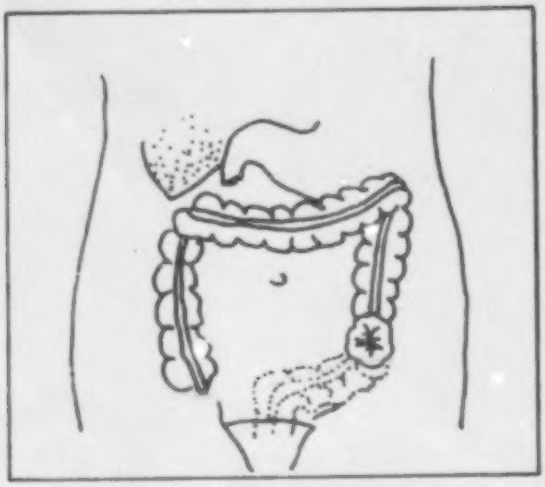
Colostomies may be temporary or permanent. They are made temporarily allowing an injured or inflammed bowel time to heal or following an extensive reconstructive surgical procedure. A permanent colostomy is made when the lower bowel is removed as for cancer.

This type of ostomy can be performed in various sites.

1. Descending colon
2. Transverse colon
    a) Single opening – involving only one segment of the bowel protruding through the abdominal wall
    b) Double barrel – involving the bowel segment completely severed and both the distal and proximal loop protruding through the abdominal wall. Feces is eliminated from the proximal loop and the distal is inactive.
3. Ascending colon
4. Ileum (known as an ileostomy)

Illustration A shows a colostomy in the descending colon.

Illustration A



Anatomical location of a stoma

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STUDENT INFORMATION SHEET NO. 3 – SKIN CARE AND ODORS RELATED TO COLOSTOMY CARE

Skin Care

Discharge from an abdominal stoma is particularly irritating to the skin. Keeping the skin surrounding the stoma and the adjacent incision clean, dry, and protected is very important in preventing odors, irritations, excoriations, and infections. Selection of techniques in caring for the skin is influenced by the *fluid* state and the *nature* of the discharge.

It is easier to prevent irritation than to treat it. The skin can remain healthy only if it is kept clean and dry.

1. Inspect the skin around the stoma (peristomal skin) regulary.
2. Clean area around stoma gently, using a mild soap, warm water, and a soft cloth or fibre cleaner.
3. Rinse area thoroughly and blot dry.

Protective agents may be prescribed for irritations (see Illustration B). If heavy ointments are used, an organic solvent such as oil may be used to remove the ointment. *Do not* scrub or pick at the peristomal skin to remove the karaya gum or any other protective agent.

Illustration B

After cleansing and drying the area surrounding the stoma, the prescribed ointment is applied

Odors

Odor is usually controlled by the following steps.

1. Follow a proper diet. Avoid foods which can cause gas or may cause an obstruction such as beans, onions, cabbage, and cauliflower.
2. Keep the appliance or dressing clean.
3. Place in the appliance or take orally a tablet containing charcoal, chlorophyll, or bismuth preparations.

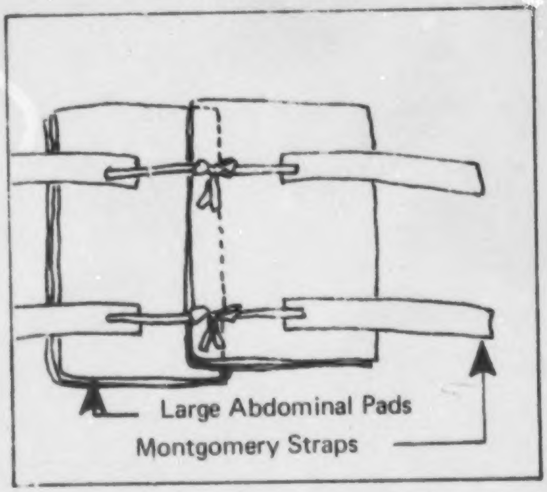
STUDENT INFORMATION SHEET NO. 4 – COLOSTOMY DRESSING

The care of the patient is directed toward preventing contamination of the surgical wound and keeping the skin in a healthy state. Dressings should be changed as often as necessary to keep the patient dry, clean, and free from odors.

Various methods exist for dressing a colostomy. A protective covering such as Kerodex or petrolatum gauze, or ointments of aluminum paste, zinc oxide or Desitin ointment may be used on the skin. Ointments must be carefully removed each time the skin is cleansed and a fresh coat of ointment must be reapplied. Any protective covering which is used must be ordered by the physician and must be removed periodically to observe the skin.

Dressings that must be changed frequently are held in place with Montgomery straps (see Illustration C).

Illustration C



The following is an example for charting/recording a colostomy dressing.

DATE	TIME	Colostomy dressing changed. 190 cc. greenish-
2/9/79	9:00 a.m.	yellow stool noted. Stoma and surrounding skin
		red and irritated. A & D Ointment applied to af-
		fected area. Still turns head during colostomy
		care. Appears to have difficulty accepting stoma
		and idea of caring for self.
		Student Signature

STUDENT INFORMATION SHEET NO. 5 – COLOSTOMY APPLIANCES

Once the patient with a colostomy has somewhat regulated his/her bowel movements, a colostomy bag (also known as a pouch) should be applied and instructions given about the care of this colostomy appliance. This will be done by the professional nurse. Depending on the site of the colostomy and the needs of the patient, the bag may be a temporary disposable or a permanent reusable appliance. It may be a good idea for you to become acquainted with the type of colostomy materials available in your hospital and/or your skills laboratory.

Temporary Disposable Bag

The temporary disposable bag is used on patients with colostomies of the descending colon. The bag is secured to the skin with a hypoallergenic adhesive and may be attached to a gasket that can be hooked to a belt for added security. The bag can be removed when filled with drainage and replaced with a new disposable bag.

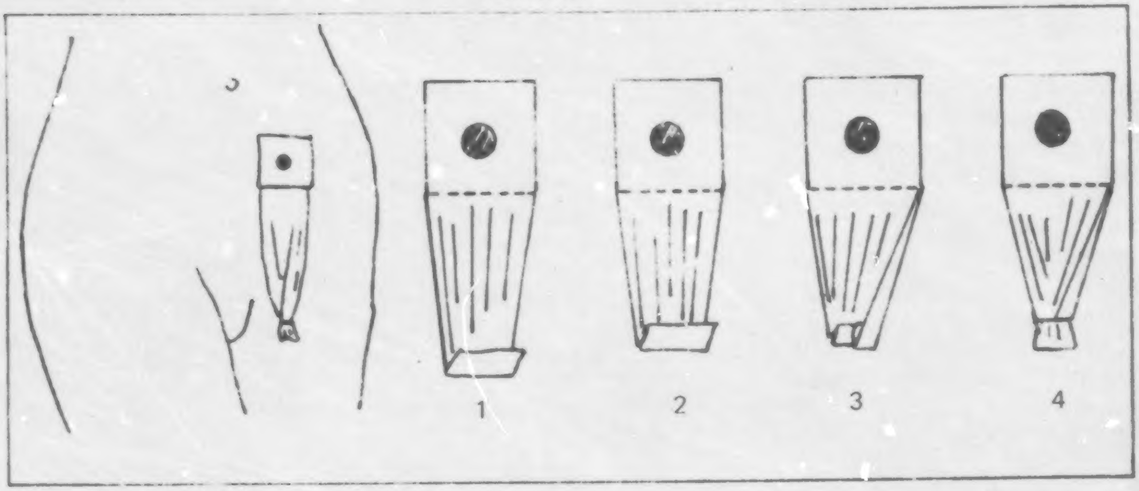
Follow these steps to remove bag.

1. Gently pull off from skin.
2. Remove excess drainage from the stoma and surrounding skin.
3. Empty content of the bag into toilet.
4. Dispose of the bag.

Follow these steps to apply a new bag.

1. Cleanse the stoma and surrounding skin.
2. Apply powder or ointment around stoma if ordered by physician.
3. Measure stoma to insure a correct fit of the opening in the bag.
4. Stick the adhesive backing of the disposable back directly onto the skin. Make sure to obtain a secure seal to the skin.
5. Remove all air from the bag (see Illustration D).
6. Fasten the belt to the gasket of the bag if a belt is used.

Illustration D



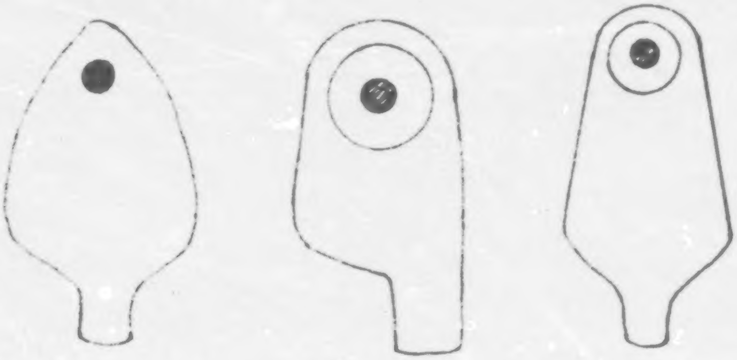
Temporary colostomy drainage bag held snugly around stoma by adhesive.

Air is removed from the bag (1), which is closed by folding it up twice (2), then folding toward center (3), and securing or sealing with a rubber band (4).

Permanent Resuable Bag

This type bag is used on patients with ileostomies or colostomies of the ascending or transverse colon. This bag requires frequent removal of the drainage due to the continual drainage flow from the stoma. Illustration E shows different types of the permanent reusable appliances.

Illustration E



Examples of reusable, permanent-type appliances of different brands. Outlets may be center or right side. Left side outlet is also available.

Permanent reusable bags are attached to the skin with a cement. Since the skin may get irritated from frequently pulling off the disposable bags with the adhesive backing, the permanent bag is designed so that the drainage can be removed from the bag without removing the bag from the skin.

Follow these steps to remove the drainage from the bag.

1. Unplug or unclamp the bottom of the bag; allow contents of the bag to drain into a plastic or stainless steel basin.

2. Empty contents from basin into toilet. If applicable, measure the amount and record on the output sheet.

3. Rinse the bag by instilling tap water into the bag with an Asepto syringe and holding the end of the bag shut. Swish the water around in the bag being careful not to pull on the seal.

4. Drain the water from the bag into a basin and repeat the rinsing procedure.

5. Close the bottom of the bag.

Permanent resuable bags are to be removed *only* when the drainage seeps under the seal or when it is necessary to deodorize or replace the bag. These bags may remain in place for days and even weeks.

STUDENT INFORMATION SHEET NO. 6 – COLOSTOMY IRRIGATION

A colostomy irrigation is given for several reasons.

1. To cleanse the intestinal tract
2. To prevent obstruction
3. To establish a regularity of evacuation

The physician will order the irrigations for patients with a new colostomy. The irrigations may begin as soon as two to four days after surgery and are usually prescribed once a day. The first irrigation should be performed by the registered nurse or licensed practical nurse.

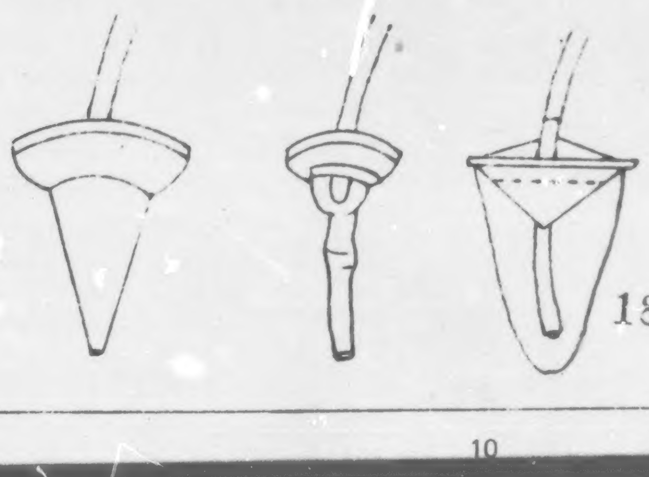
Factors To Consider in Irrigating

1. If the opening is permanent, the patient should be taught by the registered nurse to irrigate the colostomy her/himself as soon as possible. This is a vital part in preparing the patient to adjust to a normal life.
2. All personnel caring for the patient must demonstrate tact, patience, and a positive attitude which are invaluable in helping a patient to accept his/her condition.
3. Follow these steps when the irrigation is given to establish a regularity of evacuation.
    1. Give irrigation at the same time every day or every other day, depending on the orders.
    2. Have patient watch his/her diet closely to determine any foods which cause loose bowel movements so they can be avoided.
    3. Avoid and/or eliminate emotional stress since this can cause irregularity.

Spasms in the colon may occur which will prevent irrigations. Wait about 30 seconds and try again. Check the temperature solution; it may be too cold.

A cone may be used in place of a catheter or rectal tube. The cone eliminates any possibility of perforating the colon. It also acts as a stomal dilator and prevents backflow, thus promoting a more complete evacuation (see Illustration F).

Illustration F



These are examples of irrigation cones manufactured by different companies.

The following procedure is one method for irrigating the colostomy using the cone. You should check the policy of your employing agency concerning the procedure preferred.

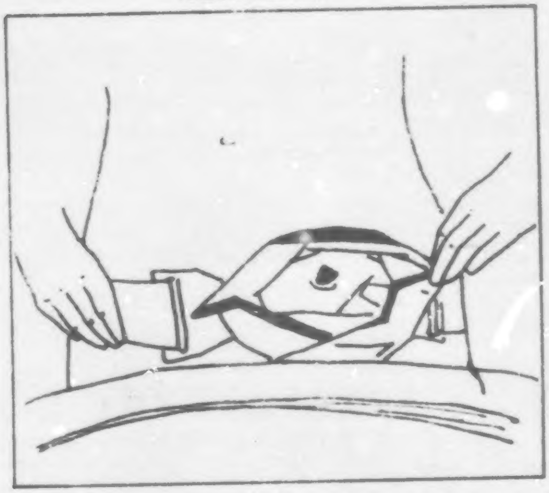
Necessary Equipment

1000 cc of normal saline solution (1:9 solution of salt and slightly warm tap water)
Irrigation set containing an irrigator, irrigator sleeve, ostomy belt, and lubricant (If the set is not available, obtain an enema can, a French catheter size 24 to 26, a lubricant, pitcher, and an irrigating drain or sleeve.)
Bath blanket
Toilet paper
Small clothes pins or large paper clips
Foam rubber ring (optional)
Portable IV standard

Procedure

Method	Key Points
1. Explain to the patient what you are going to do.	Teaching the irrigation procedure to the patient should begin with the first irrigation.
2. Assist patient to bathroom and have him/her sit on chair facing commode.	The irrigation can be more effective when performed while the patient is sitting facing the commode. Pad chair for comfort; use foam rubber ring or pillow. Patient may need to sit for 30 to 45 minutes.
3. Remove colostomy appliance and discard in plastic bag.	
4. Apply irrigation sleeve with elastic belt.	The sleeve is an appliance which surrounds the exposed stoma. (See Illustration G.) The bottom of the sleeve has an opening which should be placed over the toilet. The irrigating solution leaves the intestine via the irrigation sleeve and into the toilet.

Illustration G



Plastic irrigation sleeve.

Method	Key Points
5. Prepare solution as ordered.	Never use more than 1000 cc. First irrigation is usually 200 to 500 cc normal saline (a 1:9 solution of salt and slightly warm tap water).
6. Hang water bag on I.V. Standard and expel air from tubing.	The irrigating bag should be high enough for water to flow slowly. Due to modern control valve, height of water is not a factor.
7. Insert the lubricated cone until the fit is snug. If water leaks around the cone, use gentle pressure to block the back flow.	Be sure plastic catheter is inserted to tip of cone to prevent leakage. Cone should be fitted into stoma far enough to allow water to flow in and to block any back flow of water around the top (a distance of approximately 6 to 8 inches into the stoma).
8. Allow solution to flow slowly into colostomy (about 1000 cc for 15 to 20 minutes).	
9. If severe cramping occurs while instilling the water, stop the flow of water. Hold cone in place and have patient take a few deep breaths. When the cramping subsides, resume the irrigation.	
10. After patient has taken all the water or normal saline, clamp the tube and hold cone in place for 2 to 3 minutes. Then remove the cone and allow 15 to 20 minutes for stool and water evacuation.	The amount of solution for the first irrigation is never more than 200 to 500 cc. For each subsequent irrigation, the amount is usually increased by 500 cc, up to a maximum of 1000 cc. If too much solution is used, it will not all return and the patient will have spillage. Flushing the toilet several times and rinsing the stool through the sleeve increases the likelihood of patient acceptance of the procedure.
11. After the initial return of stool and water, clamp the bottom of the drain or fold the bottom to the top and clip with small clothes pins or large paper clips. Leave sleeve on for approximately one hour.	If patient is not unduly fatigued, encourage him/her to use this time to move about – walk; take a bath; shave, etc. Moving about stimulates the bowel to empty more completely.
12. Clean equipment with warm soapy water; rinse and hang on I.V. standard or in bathroom to dry.	Hang irrigation bag up with clamp open. Allow tubing to hang freely so it will dry. Sleeve may be washed and used over.

Method	Key Points
13. Chart/record time, solution, amount, appearance of return, and reaction of patient on Stomal Therapy Record. Note the condition of stoma and surrounding skin and type of appliance applied. Note how much of procedure patient was able to do and teaching accomplished.	Most patients require a short rest after a colostomy irrigation before beginning other strenuous procedures. Colostomy irrigations should be done at the same time each day and preferably by the same nurse. It should also be done at a time of the day which will be convenient for the patient to continue upon returning home.

The following is an example of charting/recording a colostomy irrigation.

DATE	TIME	
2/9/79	10:00 a.m.	Self-colostomy irrigation with supervision. 1000
		cc tap water to irrigate. Large amount of brown
		semi-soft stool with much flatus returned. Did
		well with little assistance.
		Student Signature

If the patient is confined to bed the procedure is the same with the following exceptions.

1. Place the irrigating sleeve securely around the stoma after the solution has been instilled to prevent it from leaking.
2. Clamp the end of the drain or allow contents from the sleeve to flow into a bedpan at the side of the bed.

STUDENT SELF-CHECK

Unscramble the letters in Column A to find the answers to their definitions in Column B.

COLUMN A	COLUMN B
1. yrkaaa mgu	A substance that protects skin from irritation
2. leisotmyo	A person with this type opening has continuous drainage from the stoma
3. msootate	Refers to a person with an ostomy
4. ssatnamooi	A surgical end-to-end union of two hollow body parts
5. matos	An opening or mouth artifically created between the body cavity and the body's surface
6. tceloocym	Surgical removal of all or part of the large intestine
7. tiioonxcear	The removal of pieces of skin as a result of scrapping or rubbing away
8. sssoenit	A decrease in diameter, as in a stoma
9. yoootlcsm	The extension of the last half of the large intestine through the abdominal wall to allow for the expulsion of feces, or the routing of waste materials through an artificial opening on the abdominal wall
10. vvlluuso	A twisting of the bowel upon itself causing an obstruction

CHECK-OUT ACTIVITIES

The statements below explain the activities you must be able to complete in order to finish this module. After you complete the activities, your evaluator will rate your performance using the Evaluator's Final Checklist, COLOSTOMY CARE.

You will be given a patient or simulator, physician's orders, and necessary equipment for colostomy care. You will change a colostomy or dressing bag according to the following standards.

1. Remove soiled dressing or bag.
2. Cleanse stoma and inspect for irritation.
3. Lubricate stoma and cover with clean dressing or bag.
4. Wash hands.
5. Chart/record accurately and note reaction of patient during procedure.

You will irrigate a colostomy according to the following standards.

1. Check physician's orders.
2. Assemble and prepare equipment.
3. Identify patient and explain procedure.
4. Wash hands.
5. Provide privacy and comfort for patient.
6. Remove colostomy appliance properly and apply irrigation sleeve.
7. Hand water bag in IV standard and expel air from tubing.
8. Insert lubricated cone or catheter until the fit is snug.
9. Allow solution to flow at proper speed.
10. Allow proper time for stool and water excretion.
11. Cleanse patient area and make patient comfortable.
12. Clean all equipment and place in proper area.
13. Chart/record results including patient's reaction to procedure.

IV-G-1

Student ______________________

Date ______________________

COLOSTOMY CARE

Evaluator's Final Checklist

Check the student's performance in the following elements of colostomy care.

Place an X in the appropriate box indicating Not Accomplished, Partially Accomplished, or Fully Accomplished. If, because of special circumstances, the item was impossible to complete, place an X in the Not Applicable box.

Performance Level: All items must receive a rating of FULLY ACCOMPLISHED (or Not Applicable). If any items are rated Not Accomplished or Partially Accomplished, the student and evaluator will discuss this and decide which learning activities must be repeated.

	Student Performance			
	Not Applicable	Not Accomplished	Partially Accomplished	Fully Accomplished
When changing the colostomy dressing or bag, the student:				
1. Removed soiled dressing or bag.	[ ]	[ ]	[ ]	[ ]
2. Cleansed stoma and inspected for irritation.	[ ]	[ ]	[ ]	[ ]
3. Lubricated stoma and covered with clean dressing or bag.	[ ]	[ ]	[ ]	[ ]
4. Washed hands.	[ ]	[ ]	[ ]	[ ]
5. Charted/recorded results correctly and noted reaction of patient during procedure.	[ ]	[ ]	[ ]	[ ]
When irrigating the colostomy, the student:				
1. Checked physician's orders.	[ ]	[ ]	[ ]	[ ]
2. Assembled and prepared equipment.	[ ]	[ ]	[ ]	[ ]
3. Identified patient and explained procedure.	[ ]	[ ]	[ ]	[ ]
4. Washed hands.	[ ]	[ ]	[ ]	[ ]
5. Provided privacy and comfort for patient.	[ ]	[ ]	[ ]	[ ]
6. Removed colostomy appliance properly and applied irrigation sleeve.	[ ]	[ ]	[ ]	[ ]
7. Hung water bag on IV standard and expelled air from tubing.	[ ]	[ ]	[ ]	[ ]
8. Inserted lubricated cone or catheter until the fit was snug.	[ ]	[ ]	[ ]	[ ]
9. Allowed solution to flow at proper speed.	[ ]	[ ]	[ ]	[ ]
10. Allowed proper time for stool and water excretion.	[ ]	[ ]	[ ]	[ ]
11. Cleansed patient area and made patient comfortable.	[ ]	[ ]	[ ]	[ ]
12. Cleaned all equipment and placed in proper area.	[ ]	[ ]	[ ]	[ ]
13. Charted/recorded results including patient's reaction to procedure.	[ ]	[ ]	[ ]	[ ]

STUDENT SELF-CHECK KEY

1. karaya gum
2. ileostomy
3. anatomosis
4. ostomate
5. stoma
6. colectomy
7. excoriation
8. stenosis
9. colostomy
10. volvulus

Module No. IV-G-2

BOWEL ELIMINATION

INTRODUCTION

Bowel elimination is one of the most important functions of the body. Elimination of the waste products at regular intervals aids in the proper absorption of food nutrients. The body must get rid of waste materials that are produced through the digestive process. If bowel elimination is not carried through properly, the patient's life may be endangered. In this module you will learn how to assist with bowel elimination by learning how to administer enemas, remove fecal impactions, and insert rectal tubes.

DIRECTIONS

In order to complete this module you will need:

1. Enema materials and solutions
2. Enema simulator or manikin
3. Rectal tube
4. Bath thermometer
5. Physician's orders

Read the Objective. If you think that you are able to perform this task, read the Check-Out Activities. Then either arrange with your evaluator to do the Check-Out Activities,

or

If you need to complete learning activities in order to be able to perform this task, locate the section on Learning Activities and go through them in the order in which they are listed.

OBJECTIVE

Given selected instructional exercises on bowel elimination, a manikin or enema simulator, enema materials and solution, a rectal tube, bath thermometer and physician's orders, you will be able to administer an enema, insert a rectal tube, and remove fecal impaction.

The procedures will be performed according to pre-established medical guidelines. Refer to Evaluator's Final Checklist at conclusion of module.

LEARNING ACTIVITIES

1. READ
   - a) *Nursing Skills for Allied Health Services*, pages 387-422,
   - b) *Health Assistant*, pages 240-247,

   and/or ______________________________.

2. VIEW Trainex filmstrip "Cleansing Enema."

3. COMPLETE Student Self-Check. Record your answers on a separate sheet of paper.

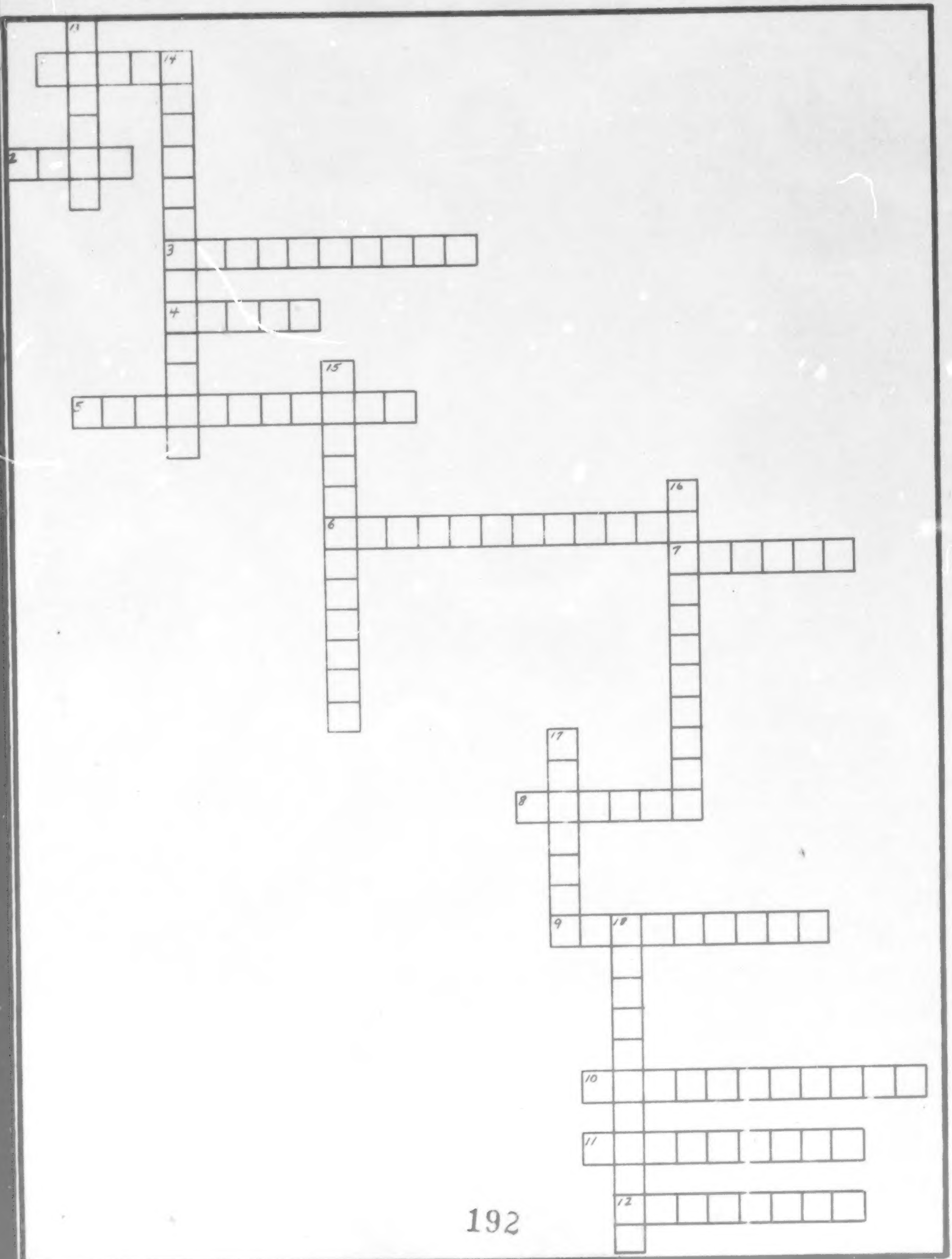
4. PRACTICE with a partner giving enemas, inserting rectal tubes, and removing fecal empactions on a manikin or simulator.

5. ARRANGE with your evaluator to complete this module by going through the Check-Out Activities.

STUDENT SELF-CHECK

Crossword Puzzle

IV-G-2



Across

1. The waste material following digestion: the stool
2. The outer opening of the rectum between the buttocks and beyond the lower top of the sacrum
3. Inflammation and distention of little pouches throughout the colon
4. Mouth or opening, or an artifically created opening
5. A cone-shaped, medicated substance that is inserted in the rectum where it dissolves and is absorbed
6. Inability to retain feces or urine; lack of voluntary control over sphincters
7. The lower part of the large intestine between the sigmoid and the anus, about 5 inches long
8. Gas in the digestive tract
9. A circular muscle that opens and closes an opening such as the sphincter of the anus
10. Examination of the rectum by instrument
11. An incision in the colon to form an artificial opening (stoma)
12. Frequent movement of the bowels, increased number of stools per day, open liquid or semiliquid

Down

13. Same as number 7 across
14. Examination of the sigmoid colon by instrument
15. Sluggish action of the bowels; compacting of the feces into hard, dense mass
16. Contractions of the intestines followed by relaxation, which propels food content, fluids, and flatus onward
17. Inflation of the colon
18. Dilated blood vessels in the anal area

STUDENT SELF-CHECK

Fill in the Blanks

1. The 2 main functions of the intestines are _____ and _____.

2. The color of the normal stool in an adult is_______________.

3. One of your patients has just had a bowel movement that is black in appearance and tarry in consistency. This means the stool contains ________.

4. For a cleansing enema given to an adult, tell what you would do for the following questions.

   A. What kind of solution?
   B. How much solution?
   C. What temperature of solution?
   D. How high would you hold container above anus?

5. Name 3 purposes for using a rectal suppository.

6. What 3 things do you observe about the results of an enema?

7. A patient with a ileostomy would have what type of stools?

8. When a patient has only small amounts of semi-soft or liquid stools and doesn't have a BM for several days, you would suspect __________ __________.

CHECK-OUT ACTIVITIES

The statements below explain the activities you must be able to complete in order to finish this module. After you go through the activities, your evaluator will rate your performance using the Evaluator's Final Checklist, BOWEL ELIMINATION

You will be given a manikin or enema simulation, enema materials and solution, rectal tube, bath thermometer, and physician's orders. You will administer an enema according to the following standards.

1. Collect materials needed and wash hands.
2. Prepare solution as ordered (100-105°F).
3. Carry solution to room; identify patient.
4. Explain procedure to patient.
5. Wash hands; prepare patient correctly with attention to privacy, drape and position; adjust bed height and lower side rails.
6. Lubricate tube 1". Expel air from tube, allowing solution to run in bedpan.
7. Gently insert rectal tube into patient's rectum (4").
8. Allow solution to run slowly (container 12-18" above anus).
9. Remove tube and place in paper towel.
10. Assist patient to the bathroom or on the bed pan.
11. State the observation about results of enema.
12. Leave patient comfortable and the room clean.
13. Chart/record results correctly.

You will insert a rectal tube according to the following standards.

1. Gather and prepare materials.
2. Identify patient.
3. Explain procedure to patient.
4. Position patient and provide privacy.
5. Lubricate tube and properly insert tube in patient's rectum.

You will remove fecal impaction according to the following standards.

1. Collect and prepare materials.
2. Identify patient.
3. Explain procedure to patient.
4. Position patient correctly and comfortably.
5. Put on glove; lubricate index finger; remove or break up fecal impaction.
6. Cleanse patient properly and leave in comfortable position.
7. Chart/record results correctly.

BOWEL ELIMINATION IV-G-2

Student ____________________

Date ____________________

Evaluator's Final Checklist

Check the student's performance in the following elements of bowel elimination

Place an X in the appropriate box indicating Not Accomplished, Partially Accomplished, or Fully Accomplished. If, because of special circumstances, the item was impossible to complete, place an X in the Not Applicable box.

Performance Level: All items must receive a rating of FULLY ACCOMPLISHED (or Not Applicable). If any items are rated Not Accomplished or Partially Accomplished, the student and evaluator will discuss this and decide which learning activities must be repeated.

	Student Performance			
	Not Applicable	Not Accomplished	Partially Accomplished	Fully Accomplished
When administering an enema the student:				
1. Collected materials needed and washed hands.	☐	☐	☐	☐
2. Prepared solution as ordered (100-105°F).	☐	☐	☐	☐
3. Carried solution to room; identified patient.	☐	☐	☐	☐
4. Explained procedure to patient.	☐	☐	☐	☐
5. Washed hands; prepared patient correctly with attention to privacy, drape and position; adjusted bed height and lowered side rails.	☐	☐	☐	☐
6. Lubricated tube 1". Expelled air from tube, allowing solution to run in bedpan.	☐	☐	☐	☐
7. Gently inserted rectal tube into patient's rectum (4").	☐	☐	☐	☐
8. Allowed solution to run slowly (container 12-18" above anus).	☐	☐	☐	☐
9. Removed tube and placed in paper towel.	☐	☐	☐	☐
10. Assisted patient to the bathroom or on the bed pan.	☐	☐	☐	☐
11. Stated the observations about results of enema.	☐	☐	☐	☐
12. Left patient comfortable and the room clean.	☐	☐	☐	☐
13. Charted/recorded results correctly.	☐	☐	☐	☐
When inserting a rectal tube, the student:				
1. Gathered and prepared materials.	☐	☐	☐	☐
2. Identified patient.	☐	☐	☐	☐
3. Explained procedure to patient.	☐	☐	☐	☐
4. Positioned patient and provided privacy.	☐	☐	☐	☐
5. Lubricated tube and properly inserted tube in patient's rectum.	☐	☐	☐	☐

When removing fecal impaction, the student:

1. Collected and prepared materials.	[ ]	[ ]	[ ]	[ ]
2. Identified patient.	[ ]	[ ]	[ ]	[ ]
3. Explained procedure to patient.	[ ]	[ ]	[ ]	[ ]
4. Positioned patient correctly and comfortably.	[ ]	[ ]	[ ]	[ ]
5. Put on gloves; lubricated index finger; removed or broke up fecal impaction.	[ ]	[ ]	[ ]	[ ]
6. Cleansed patient properly and left in comfortable position.	[ ]	[ ]	[ ]	[ ]
7. Charted/recorded results correctly.	[ ]	[ ]	[ ]	[ ]

STUDENT SELF CHECK KEY

Crossword Puzzle

Across	Down
1. Feces	13. Rectum
2. Anus	14. Sigmoidoscopy
3. Diverticulitis	15. Constipation
4. Stoma	16. Peristalsis
5. Suppository	17. Colitis
6. Incontinence	18. Hemorrhoids
7. Rectum	
8. Flatus	
9. Sphincter	
10. Proctoscopy	
11. Colostomy	
12. Diarrhea	

Fill in the Blanks

1. absortion, elimination of waste products

2. brown, brownish yellow

3. blood

4. A. TWE, SSE, Saline or as ordered by MD
   B. 1000 ml
   C. 105° or $40.5^{\circ}C$
   D. 12 - 18 inches

5. A. relieve pain
   B. give medication
   C. promote bowel movement

6. A. colon
   B. amount
   C. consistency

7. liquid, runny

8. fecal impaction

BASIC NUTRITION AND DIET THERAPY

INTRODUCTION

America is the best fed nation in the world; yet we have many disorders relating to the diet. Some of our problems may result from a lack of knowledge of body requirements and nutrient supply or from a lack of concern. An idividual's state of health is often directly related to the quality and quantity of food he/she eats. In this module you will learn to identify the nutrients, their functions, and the foods which contain these nutrients.

DIRECTIONS

Read the Objective. If you think you are able to perform this task, read the Check-Out Activities. Then either arrange with your evaluator to do the Check-Out Activities,

or

If you need to complete learning activities in order to be able to perform this task, locate the section on Learning Activities and go through them in the order in which they are listed.

OBJECTIVE

Given selected instructional exercises related to nutrition and diet therapy, you will be able to:

1. Identify the six essential nutrients and their food sources.
2. Identify the four basic food groups and their food sources.
3. Identify the four basic hospital diets.
4. Identify the manner in which the four basic hospital diets can be modified as a part of therapy.

You will demonstrate mastery of the knowledge by scoring a minimum of ____% on a teacher prepared written examination.

LEARNING ACTIVITIES

1. READ
   a) *Health Assistant*
   "Nutritional Needs and Modifications," pages 96-103
   b) *Basic Sciences for Health Careers*
   "Essentials of Nutrients," pages 233-239
   "Basics of Nutrition," pages 263-277
   "Diet and Disease," pages 278-284
   c) *Modern Health*
   "Food," pages 314-335,

   and/or ______________________________ .

2. WRITE a short definition for the terminology listed on Student Assignment Sheet No. 1.

3. WRITE answers to questions at the end of the chapters of assigned reading.

4. STUDY Student Information Sheet from *Health Service Careers, Health Occupations Education,* pages 5D-20D, Oklahoma State Department of Education. Your instructor will provide a copy.

5. MAKE a poster to show one aspect of nutritional needs, food groups or special diets. (Student Assignment Sheet No. 2). Get instructor's approval of topic before you start.

6. RECORD your daily intake for one day and calculate the number of calories and nutrients you obtained.

7. ATTEND class discussion on nutrition.

8. COMPLETE Student Self-Check. Record your answers on a separate sheet of paper.

9. ARRANGE with your evaluator to complete this module by going through the Check-Out Activities.

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STUDENT ASSIGNMENT SHEET NO. 1 – BASIC NUTRITION AND DIET THERAPY

Write and learn a short definition for the following terms.

1. Nutrition
2. Dietetics
3. Nutrient
4. Food
5. Diet
6. Digestion
7. Amino acids
8. Protein
9. Fats (Lipids)
10. Glycerol
11. Carbohydrates
12. Saccharide
13. Glucose
14. Cellulose
15. Minerals
16. Vitamins
    a) Water-solution vitamin
    b) Fat-soluble vitamin
17. Water
18. Dehydration
19. Edema
20. Therapeutic
21. Calorie
22. Adipose tissue
23. Obseity
24. Appetite
25. Hunger
26. Cholesteral
27. Condiment
28. Fortified food
29. Enriched food
30. Botulism
31. Anorexia
32. Malnutrition
33. Deficiency disease
34. Avitaminosis
35. Force fluids
36. I. V. infusion
37. Supplementary nourishments

STUDENT ASSIGNMENT SHEET NO. 2 – MAKE A POSTER ON NUTRITION

Collect the following materials to make a poster.

1. Pictures from magazines, pamphlets or newspapers
2. Scissors
3. Paste or glue
4. Heavy paper or poster board
5. Felt-tip pens for lettering
6. Other equipment as needed for individual creativity

Work in groups of 2 or 3 to prepare a poster using one of the following subjects.

1. Principal sources of carbohydrates
2. Snack foods that are nutritious and those that contain mostly "empty" calories
3. Sources of incomplete proteins
4. Sources of complete proteins
5. Foods containing visible fats
6. Foods containing invisible fats
7. Four basic food groups (on one poster or on four separate posters)
8. Minerals – functions and sources
9. Vitamins – functions, sources and deficiency disease or condition (this could be divided into fat-soluble and water-soluble vitamins)
10. Food additives
11. Desirable weight range for height
12. Basic hospital diets or special therapeutic diets

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STUDENT SELF-CHECK

Terminology

Match the terms in Column A with their difinitions in Column B. Check your answers against the key.

Column A

1. Supplementary nourishments
2. Intravenous infusion
3. Therapeutic
4. Nutrition
5. Vitamin
6. Protein
7. Anorexia
8. Force fluids
9. Minerals
10. Carbohydrates and fats

Column B

A. Process by which body uses food for growth, repair and health

B. Fluids given directly into veins

C. The only nutrient that can make new cells and rebuild tissue

D. Energy goods

E. Substance that regulates body processes

F. Chemicals that build body tissues, especially bones and teeth, and regulate body fluids

G. Treatment diets

H. Absence of appetite

I. Patient is encouraged to take fluids

J. Foods given between meals

Completion

1. Name 4 functions of foods.
2. Name the 6 basic nutrients.
3. Name the 4 basic diets.

CHECK-OUT ACTIVITIES

The statements below explain the activities you must be able to complete in order to finish this module. After you complete the activities, your evaluator will rate your performance using the Evaluator's Final Checklist, BASIC NUTRITION AND DIET THERAPY.

You will be given an examination on basic nutrition and diet therapy. You must score a minimum of ___% on the teacher-prepared written examination.

You will prepare a poster on a topic related to basic nutrition and diet therapy.

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IV-G-3

Student ______________________

Date ______________________

BASIC NUTRITION AND DIET THERAPY

Evaluator's Final Checklist

Check the student's performance in the following elements of basic nutrition and diet therapy.

Place an X in the appropriate box indicating Not Accomplished, Partially Accomplished, or Fully Accomplished. If, because of special circumstances, the item was impossible to complete, place an X in the Not Applicable box.

Performance Level: All items must receive a rating of FULLY ACCOMPLISHED (or Not Applicable). If any items are rated Not Accomplished or Partially Accomplished, the student and evaluator will discuss this and decide which learning activities must be repeated.

	Student Performance			
	Not Applicable	Not Accomplished	Partially Accomplished	Fully Accomplished
Student scored __ % on the teacher-prepared written examination.	[ ]	[ ]	[ ]	[ ]
Student completed a poster on a topic related to basic nutrition and diet therapy.	[ ]	[ ]	[ ]	[ ]

Topic ____

STUDENT SELF-CHECK KEY

Terminology

1. J
2. B
3. G
4. A
5. E
6. C
7. H
8. I
9. F
10. D

Completion

1. A. promote growth
   B. provide heat
   C. repair tissues
   D. regulate body process

2. A. protein
   B. carbohydrates
   C. fats
   D. minerals
   E. vitamins
   F. water

3. A. regular or house
   B. soft
   C. liquid - full
   D. liquid - clear or surgical

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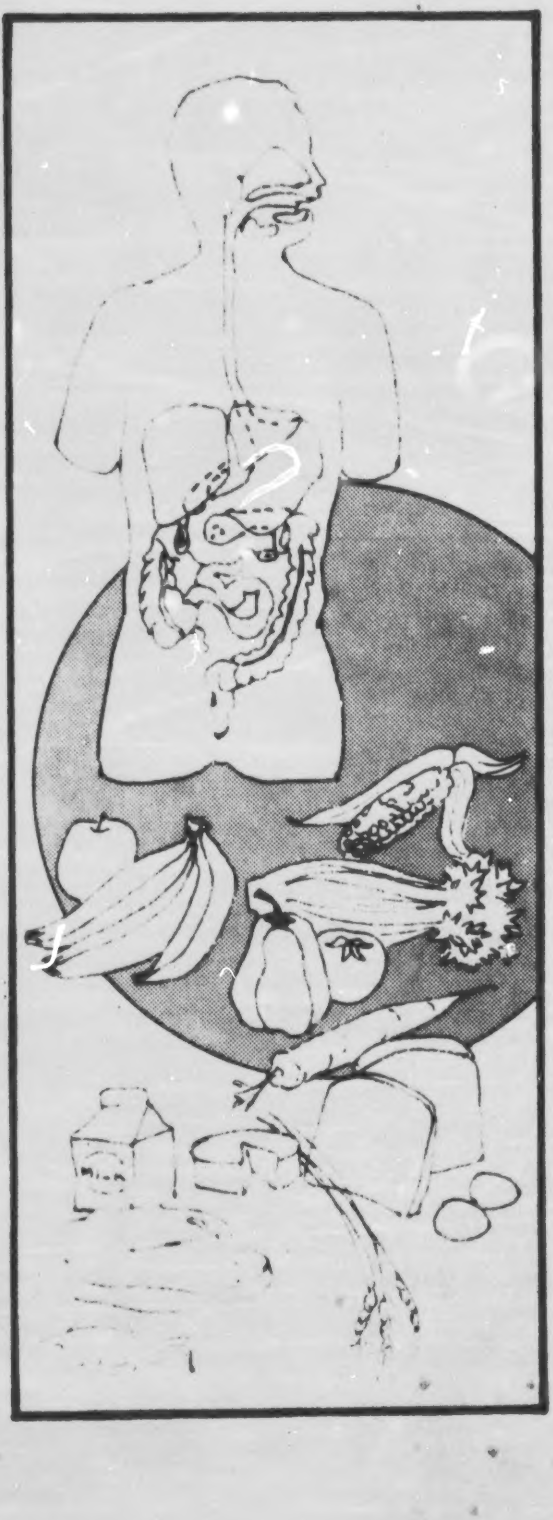
Module No. IV-G-4

PREPARING AND GIVING

TUBE FEEDING (GAVAGE)

PREPARING AND GIVING TUBE FEEDING (GAVAGE)



INTRODUCTION

Patients unable to take nourishment by mouth are often provided adequate food and fluid intake by gastric gavage or "tube feedings." This method is accomplished by giving liquid food or fluid through a tube which has been inserted into the nose to the stomach. A tube may also be surgically inserted directly into the stomach (a gastrostomy). As a health assistant (level 3 or technician), you may be responsible for giving tube feedings. You will learn how to perform this task in this module.

DIRECTIONS

In order to complete this module you will need:

1. Asepto syringe
2. Warmed formula - food/liquid nourishment
3. Container with small amount of water at room temperature
4. Towel or covering for patient
5. Patient or simulator with nasogastric or gastrostomy tube
6. Physician's orders

Read the Objective. If you think you are able to perform this task, read the Check-Out Activities. Then either arrange with your evaluator to do the Check-Out Activities,

or

If you need to complete learning activities in order to be able to perform this task, locate the section on Learning Activities and go through them in the order in which they are listed.

OBJECTIVE

Given selected instructional exercises on tube feeding, the proper supplies, a simulator or patient, and physician's orders, you will be able to administer a tube feeding correctly.

The procedure will be performed according to pre-established medical guidelines. Refer to Evaluator's Final Checklist at conclusion of module.

LEARNING ACTIVITIES

1. READ *Nursing Skills for Allied Health Services,* pages 545-566,

   and/or ______________________ .

2. VIEW Trainex filmstrip "Gavage,"

   and/or ______________________

3. PRACTICE tube feedings on a simulator.

4. COMPLETE Student Self-Check. Record your answers on a separate sheet of paper.

5. ARRANGE with your evaluator to complete this module by going through the Check-Out Activities

STUDENT SELF-CHECK

Match the terms in Column A with their definitions in Column B.

COLUMN A

1. Gavage
2. Gastric
3. Nasogastric tube
4. Emesis
5. Gastrostomy
6. Distention
7. Nausea
8. Projectile vomiting
9. Lavage
10. Aspiration

COLUMN B

A. The washing out of a cavity

B. Vomiting

C. A surgical operation making a temporary or permanent opening through the abdominal wall into the stomach

D. Feeding through a tube inserted through the nose and down the esophagus into the stomach

E. The state of being stretched out or bloated, as the abdominal cavity may be with gas or fluid

F. Adjective referring to the stomach

G. The inclination or desire to vomit

H. A rubber or plastic tube that is inserted through the nose down to the stomach

I. The forceful and sudden ejection of stomach contents, usually without preliminary nausea

J. The act of drawing in or out of a cavity of the body by suction

CHECK-OUT ACTIVITIES

The statements below explain the activities you must be able to complete in order to finish this module. After you complete the activities, your evaluator will rate your performance using the Evaluator's Final Checklist, PREPARING AND GIVING TUBE FEEDING (GAVAGE).

You will be given an asepto syringe, warmed formula, container with small amount of water at room temperature, a towel or covering for the patient, a patient or simulator with nasogastric or gastrostomy tube, and physician's orders.

You will administer a tube feeding (gavage) according to the following standards.

1. Check physician's orders and/or Nursing Care Kardex.
2. Wash hands and assemble necessary equipment.
3. Identify patient and explain procedure.
4. Position patient properly.
5. Check to be certain that tube is in proper location (in stomach).
6. Insert asepto syringe or funnel into tube opening and administer prescribed amount of formula without allowing air to enter tube. Clean tube with water at beginning and ending of feeding.
7. Clamp tube.
8. Provide for patient's comfort.
9. Chart/record procedure correctly.

IV-G-4

Student ______________________

Date ______________________

PREPARING AND GIVING TUBE FEEDING (GAVAGE)

Evaluator's Final Checklist

Check the student's performance in the following elements of preparing and giving tube feeding.

Place an X in the appropriate box indicating Not Accomplished, Partially Accomplished, or Fully Accomplished. If, because of special circumstances, the item was impossible to complete, place an X in the Not Applicable box.

Performance Level: All items must receive a rating of FULLY ACCOMPLISHED (or Not Applicable). If any items are rated Not Accomplished or Partially Accomplished, the student and evaluator will discuss this and decide which learning activities must be repeated.

	Student Performance			
	Not Applicable	Not Accomplished	Partially Accomplished	Fully Accomplished
When administering a tube feeding (gavage) the student:				
1. Checked physician's orders and/or Nursing Care Kardex.	☐	☐	☐	☐
2. Washed hands and assembled necessary equipment.	☐	☐	☐	☐
3. Identified patient and explained procedure.	☐	☐	☐	☐
4. Positioned patient properly.	☐	☐	☐	☐
5. Checked to be sure tube was in the proper location (in stomach).	☐	☐	☐	☐
6. Inserted asepto syringe or funnel into the opening and administered prescribed amount of formula without allowing air to enter tube. Cleared tube with water at beginning and ending of feeding.	☐	☐	☐	☐
7. Clamped tube.	☐	☐	☐	☐
8. Provided for patient's comfort.	☐	☐	☐	☐
9. Charted/recorded procedure correctly.	☐	☐	☐	☐

STUDENT SELF-CHECK KEY

1. D
2. F
3. H
4. B
5. C
6. E
7. G
8. I
9. A
10. J

URINARY SYSTEM

INTRODUCTION

As a health care worker you need a knowledge of how wastes are eliminated from the body. The urinary system, also known as the excretory system, functions largely to eliminate nitrogenous wastes, salts and water and performs the main part of the excretory function in the body. In this module you will learn about the urinary system.

DIRECTIONS

Read the Objective. If you think you are able to perform this task, read the Check-Out Activities. Then either arrange with your evaluator to do the Check-Out Activities,

or

If you need to complete learning activities in order to be able to perform this task, locate the section on Learning Activities and go through them in the order in which they are listed.

OBJECTIVE

Given selected instructional exercises on the urinary system, you will be able to demonstrate a knowledge of the terminology, structure and function, diagnostic tests, diseases, disorders, and conditions related to the urinary system by scoring a minimum of ___% on a teacher-prepared written examination.

LEARNING ACTIVITIES

1. READ
   a) *Health Assistant* pages 249-256
   b) *Basic Sciences for Health Careers,* pages 213-213,

   and/or ______________________.

2. WRITE a short definition for the terminology listed on Student Assignment Sheet No. 1. using *Taber's Cyclopedic Medical Dictionary*.

3. VIEW Trainex filmstrip "Anatomy of the Kidney, Ureters, and Bladder,"

   and/or ______________________.

4. DRAW a diagram of the urinary system (Student Assignment Sheet No. 2). Refer to *Health Assistant*, Figure 35-1; Urinary System, page 250.

5. IDENTIFY kidney, ureter, urinary bladder, urethra and meatus on the human torso model.

6. PARTICIPATE in a group discussion about the urinary system.

7. COMPLETE Student Self-Check. Record your answers on a separate sheet of paper.

8. ARRANGE with your evaluator to complete this module by going through the Check-Out Activities.

STUDENT ASSIGNMENT SHEET NO. 1 – URINARY SYSTEM

Write a short definition for the following terms.

1. Excretory
2. Urology
3. Nephrology
4. Dialysis
5. Renal
6. Catheter
7. Cortex
8. Medulla (of kidney)
9. Pelvis (of kidney)
10. Kidney
11. Ureter
12. Bladder
13. Urethra
14. Meatus
15. Cystoscope
16. Dysuria
17. Hematuria
18. Glomeruli
19. Micturate
20. Calculi
21. Retention
22. Suppression
23. Urea
24. Urinalysis
25. Void
26. Urinate
27. Nephron
28. Intravenous pyelogram
29. Hydronephrosis

STUDENT ASSIGNMENT SHEET NO. 2 – DIAGRAM

Draw and label a diagram of the urinary system. Include the kidney, ureter, urinary bladder, urethra and meatus. Refer to *Health Assistant,* Figure 35-1, Urinary System, page 250 or other diagram supplied by your instructor.

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STUDENT SELF-CHECK

Terminology

Match the terms in Column A with their definitions in Column B.

COLUMN A

1. Urology
2. Nephrology
3. Ureter
4. Micturate
5. Nephron
6. Excretion
7. Urea
8. Urethra
9. Edema
10. Adrenal
11. Urinary meatus
12. Urinalysis

COLUMN B

A. Tubes which carry urine from kidney to bladder

B. Tube leading from urinary bladder to outside of the body

C. Pertaining to kidney

D. To urinate or void

E. Study of urinary system

F. External openining of urethra

G. Performs the basic process of blood filtration and urine production

H. Collection, concentration, and elimination of waste materials from the body

I. Study of kidney

J. Waste formed in the liver

K. Laboratory examination of urine

L. Swelling; increased fluid in body tissue

Multiple Choice

1. If the kidney is unable to make urine, the patient suffers from

   A. retention
   B. renal calculi
   C. renal colic
   D. suppresion

2. The approximate amount of urine produced each day in the average adult is

   A. 500 – 100 cc
   B. 1000 – 1500 cc
   C. 1500 – 2000 cc
   D. 2000 – 2500 cc

3. Renal calculi are

   A. polyps in the pelvis of the kidney
   B. sturctures of the ureter
   C. stones in the kidney
   D. stones in the uterus

4. Nephritis means

   A. inflammation of the bladder
   B. inflammation of the kidney
   C. inflammation of the ureters
   D. inflammation of the urethra

5. The artificial kidney eliminates wastes and restores the correct water and electrolyte balance of the blood in a process called

   A. urinalysis
   B. dialysis
   C. cauterization
   D. cystoscope

Fill in the Blanks

1. Blood in the urine is called ________

2. Small, hollow tubes used to drain a cavity are called a ________ .

3. Foley catheters differ from other catheters in that they have a ________.

4. X-ray of the ureters is a procedure called ____________.

5. An instrument used to view the urinary tract by entering the tract through the urethra is a ____________.

CHECK-OUT ACTIVITIES

The statement below explains the activity you must complete in order to finish this module. After you complete the activity, your evaluator will rate your performance using the Evaluator's Final Checklist, URINARY SYSTEM.

You will be given an examination of the urinary system. You will be expected to score a minimum of ___% on the teacher-prepared written examination.

Student ________________________

Date ________________________

URINARY SYSTEM

Evaluator's Final Checklist

Check the student's performance in the following elements of the urinary system.

Place an X in the appropriate box indicating Not Accomplished, Partially Accomplished, or Fully Accomplished. If, because of special circumstances, the item was impossible to complete, place an X in the Not Applicable box.

Performance Level: All items must receive a rating of FULLY ACCOMPLISHED (or Not Applicable). If any items are rated Not Accomplished or Partially Accomplished, the student and evaluator will discuss this and decide which learning activities must be repeated.

	Student Performance			
	Not Applicable	Not Accomplished	Partially Accomplished	Fully Accomplished
Student scored ______% on the teacher-prepared written examination.	[ ]	[ ]	[ ]	[ ]

STUDENT SELF-CHECK KEY

Terminology

1. E
2. I
3. A
4. D
5. G
6. H
7. J
8. B
9. L
10. C
11. F
12. K

Multiple Choice

1. D
2. C
3. C
4. B
5. B

Fill in the Blanks

1. hematuria
2. catheter
3. inflatable
4. pyclogram
5. cystoscope

Module No. IV-H-1

URINARY CATHETER CARE FOR

INDWELLING CATHETER

URINARY CATHETER CARE FOR INDWELLING CATHETER

INTRODUCTION

A catheter is a tube inserted through the patient's urethra into the bladder to allow for drainage. Special care or cleaning around the meatus and the catheter is necessary to prevent any infections. This care is usually done as part of the daily bath and may be ordered more often. In this module, you will learn how to give catheter care to reduce the likelihood of bladder infection.

DIRECTIONS

In order to complete this module you will need:

1. Patient or manikin with a Foley catheter
2. Sterile catheter care kit
3. Disposable gloves
4. Cotton balls
5. Small basin
6. Povidone-iodine solution or solution ordered
7. Equipment and supplies for bathing genital area if not done as part of bath.

Read the Objective. If you think you are able to perform this task, read the Check-Out Activities. Then either arrange with your evaluator to do the Check-Out Activities,

or

If you need to complete learning activities in order to be able to perform this task, locate the section on Learning Activities and go through them in the order in which they are listed.

OBJECTIVE

Given selected instructional exercises, a patient or manikin with a Foley catheter, and the necessary equipment and supplies, you will be able to administer urinary catheter care for an indwelling catheter. You will thoroughly cleanse around the meatus and catheter; properly cleanse the external meatus and the outside of the catheter; and avoid causing any undue discomfort or physical injury to the patient.

LEARNING ACTIVITIES

1. READ *Nursing Skills for Allied Health Services*, "Foley Catheter Care," pages 318-321,

   and/or ______________________________.

2. VIEW Trainex filmstrip, "Urinary Care,"

   and/or ______________________________.

3. STUDY Student Information Sheet No. 1.

4. OBSERVE demonstration by instructor

   and/or ______________________________.

5. COMPLETE Student Self-Check. Record your answers on a separate sheet of paper.

6. PRACTICE giving catheter care to the manikin using the guide.

7. ARRANGE with your evaluator to complete this module by going through the Check-Out Activities.

STUDENT INFORMATION SHEET NO. 1 PRINCIPLES OF URINARY CATHETER CARE

Infection of the urinary bladder is an inevitable complication of bladder catheterization if the catheter is left "open" to the patient's environment.

It has been established that a closed drainage system can significantly reduce the likelihood of such infection.

Entry points for bacterial infection of the urinary bladder are shown in Illustration A.

Entry Points for Bacteria

1. Urethral meatus and around catheter
2. Junction between catheter and collection tube
3. Connection to drainage bag and reflux from bag to tubing
4. Mouth of the spigot

Taken from Kunin, C. A. *Detection, Prevention and Management of Urinary Tract Infections.* 2nd ed. Philadelphia: Lea and Febiger, 1974.

Use the following methods for reducing the likelihood of bacterial infection of the bladder.

Urethral Meatus and Around the Catheter

1. Cleanse the urethral meatus and around the catheter twice daily and apply povidone - iodine ointment or antiseptic as ordered by physician.

Junction Between Catheter and Collection Tube

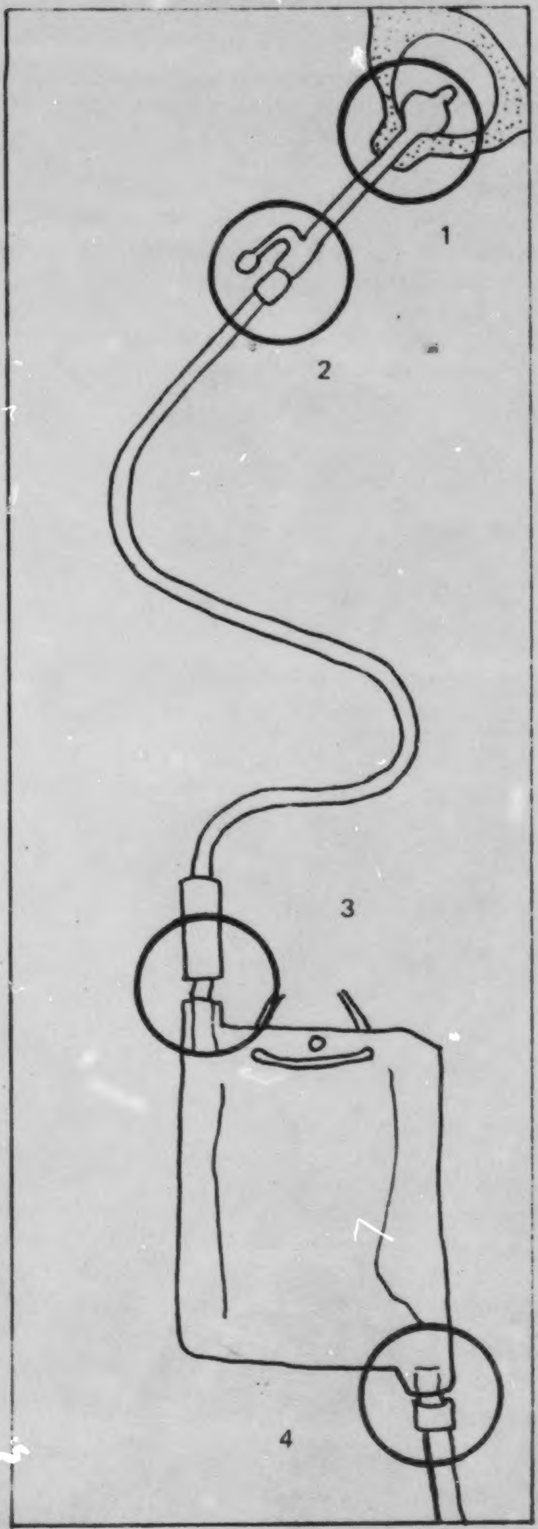
(NOTE: this is the most important route of entry for bacteria.)

2. The junction between the catheter and the collection tube is the most important route of entry for bacteria. Reduce the chance of infection by never breaking this junction. Read the module to learn how to collect specimens without breaking this junction.

Drainage Bag

3. Reduce the drainage bag by always keeping the bag lower than the catheter, by frequently emptying the bag, and by assuring that there is no obstruction between the catheter and the drainage bag. Check the catheter and tubing often to be sure they are not kinked or that the patient is not lying on them. Keep the bag off the floor.

Illustration A



STUDENT SELF-CHECK

Write the word(s) which best completes each sentence. After you have finished, check your answers with instructor's Self-Check Key. Correct any errors.

1. The Foley catheter differs from other catheters in that it has an inflatable ________ that holds it in the bladder.

2. The catheter and perineal area are cleaned ________ and p.r.n. (i.e., as circumstances require).

3. Name two important methods for reducing the likelihood of an infection.

4. The perineal area is usually cleaned with ________ and ________ prior to applying antiseptic solution to catheter at the point that it enters urethra.

5. The drainage bag should be positioned ______ the urinary bladder level.

6. The drainage bag should be emptied every ______ hours.

CHECK-OUT ACTIVITIES

The statements below explain the activities you must be able to complete in order to finish this module. As you complete the activities, your evaluator will rate your performance using the Evauator's Final Checklist, URINARY CATHETER CARE.

You will be given a patient and the equipment and supplies essential to urinary catheter care.

You will administer urinary catheter care for an indwelling catheter according to the following standards.

1. Cleanse around the meatus and catheter.
2. Cleanse the meatus and external catheter of all crust.
3. Avoid unnecessary discomfort or physical injury to the patient.

IV-H-1

Student ____________

Date ____________

URINARY CATHETER CARE FOR INDWELLING CATHETER

Evaluator's Final Checklist

Check the student's performance in the following elements of urinary catheter care for indwelling catheter.

Place an X in the appropriate box indicating Not Accomplished, Partially Accomplished, or Fully Accomplished. If, because of special circumstances, the item was impossible to complete, place an X in the Not Applicable box.

Performance Level: All items must receive a rating of FULLY ACCOMPLISHED (or Not Applicable). If any items are rated Not Accomplished or Partially Accomplished, the student and evaluator will discuss this and decide which learning activities must be repeated.

When administering urinary catheter care for an indwelling catheter, the student:

	Student Performance			
	Not Applicable	Not Accomplished	Partially Accomplished	Fully Accomplished
1. Cleansed around the meatus and catheter.	☐	☐	☐	☐
2. Cleansed the meatus and external catheter of all crust.	☐	☐	☐	☐
3. Avoided unnecessary discomfort or physical injury to patient.	☐	☐	☐	☐

STUDENT SELF-CHECK KEY

1. Balloon or bag

2. Twice a day

3. A. Cleaning around urethral meatus and around catheter
   B. Never breaking or disconnecting the catheter from the drainage tube

4. Soap, water

5. Below

6. Eight

OBTAINING URINE SPECIMENS FROM THE CATHETERIZED PATIENT

OBTAINING URINE SPECIMENS FROM THE CATHETERIZED PATIENT

INTRODUCTION

The bladder is a sterile cavity; therefore, infection in it can have a serious effect on the patient. Disconnecting the catheter from the drainage tube increases the chance of infection. In this module you will learn how to obtain a specimen without contaminating the catheter.

DIRECTIONS

In order to complete this module you will need:

1. Patient or simulator with urinary catheterization
2. Alcohol swabs
3. Small injection syringe with needle
4. Retention catheter connected to drainage bag
5. Sterile specimen container (if required)
6. Laboratory requisition for culture
7. Container to dispose of needle if specimen is place in sterile specimen container

Read the Objective. If you think you are able to perform this task, read the Check-Out Activities. Then either arrange with your evaluator to do the Check-Out Activities,

or

If you need to complete learning activities in order to be able to perform this task, locate the section on Learning Activities and go through them in the order in which they are listed.

OBJECTIVE

Given selected instructional exercises, a patient, and the necessary materials and supplies for obtaining a urine specimen from a catheterized patient, you will be able to aspirate a urine specimen from a closed catheter without any contamination.

LEARNING ACTIVITIES

1. READ Student Information Sheet No. 1.
2. OBSERVE a demonstration by your instructor.
3. PRACTICE aspirating urine using a syringe and needle.
4. COMPLETE Student Self-Check. Record your answers on a separate sheet of paper.
5. ARRANGE with your evaluator to complete this module by going through the Check-Out Activities.

STUDENT INFORMATION SHEET NO. 1 – OBTAINING URINE SPECIMENS IN THE CATHETERIZED PATIENT

The junction between the catheter and the connecting tubing should *never* be disconnected for this purpose.

1. Specimens for *chemical analysis* (for example, sodium, potassium, osmolality, creatinine) can be obtained from the drainage bag.
2. Specimens for *diabetic urines* can be obtained from the drainage bag provided the bag is emptied just before the sample is to be collected. This is also true of specimens for *routine urinalysis.*
3. Specimens for *culture* should always be obtained by aspiration through the catheter or aspiration port, as described below.

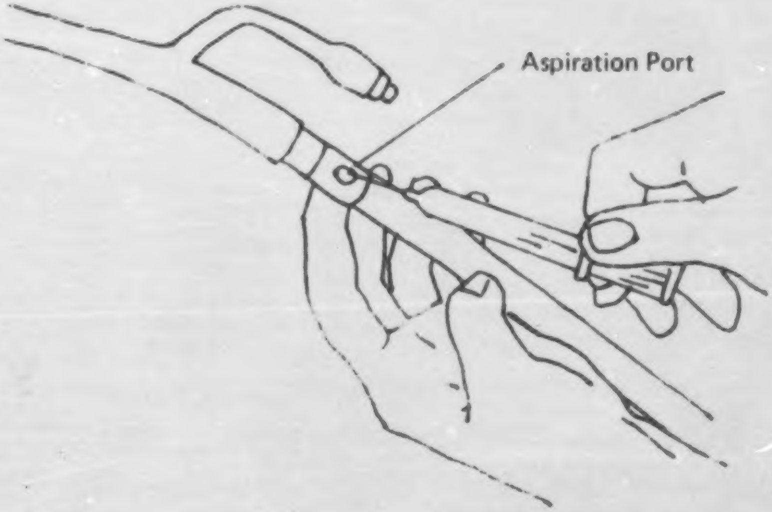
Equipment for Aspirating Urine Specimen from Catheter

1. Alcohol swab
2. Small syringe (3 to 5 cc)
3. 25 gauge needle
4. Sterile specimen container

Procedure

1. Swab the aspiration port area or the distal end of the catheter with alcohol.
2. Insert the needle into the catheter or aspiration port at a slant, as shown in illustration B. Use sterile technique.

Illustration B



3. Aspirate 1 to 2 cc of urine. Remove needle and wipe aspiration port with clean alcohol sponge.
4. Label syringe with the patient's last name, initial, and room number.
5. If you do not send syringe to laboratory, put specimen in sterile specimen container. Properly dispose of needle.
6. Send specimen promptly to laboratory. If it is not possible to send sample immediately, the urine should be placed in the refrigerator at 4°C until it can be sent. As noted above, a urine specimen is no longer valid for culture if left at room temperature for 20 minutes.
7. Record procedure.

*Safety Point: Maintain sterile technique. Dispose of needle in container provided for this purpose.

STUDENT SELF-CHECK

Terminology

Match the terms in Column A with their definitions in Column B.

COLUMN A	COLUMN B
1. Sterile	A. To remove by suction
2. Specimen	B. The place of joining of two parts
3. Aspirate	C. Tube or catheter joined to drainage bag
4. Port	D. To determine the growth of microorganisms
5. Closed Catheter	E. Free from living microorganisms
6. Diabetic urine	F. To separate or determine chemicals in urine
7. Routine urinalysis	G. To check urine for glucose content
8. Chemical analysis	H. A small sample (part) of something to show quality of the whole
9. Junction	I. Checking urine for component substances
10. Syringe	J. Instrument for injecting or removing fluids from cavity
11. Culture	K. An entrance

Fill in the Blanks

1. The aspiration port should be cleansed with __________ prior to collecting specimen.
2. _______ cc of urine should be aspirated for a urine culture.
3. A specimen for diabetic urine may be obtained from bag if it has been ______ just prior to taking sample.
4. The specimen should be labeled and sent to laboratory________ .
5. A urine specimen is no longer valid for culture if left at room temperature for _______minutes.

CHECK-OUT ACTIVITIES

The statements below explain the activities you must be able to complete in order to finish this module. After you complete the activities, your evaluator will rate your performance using the Evaluator's Final Checklist, THE CATHETERIZED PATIENT.

You will be given a patient or simulator with a urinary catheterization and all the materials and supplies essential for obtaining a urine specimen.

You will obtain a urine specimen from the catheterized patient according to the following standards.

1. Cleanse port with antiseptic.
2. Aspirate 1 to 2 cc's urine without contamination.
3. Label the specimen properly.
4. Chart/record procedure accurately.

The procedure will be accomplished without contamination.

IV-H-2

Student ____________________

Date ____________________

OBTAINING URINE SPECIMENS FROM THE CATHETERIZED PATIENT

Evaluator's Final Checklist

Check the student's performance in the following elements of obtaining urine specimens from the catheterized patient.

Place an X in the appropriate box indicating Not Accomplished, Partially Accomplished, or Fully Accomplished. If, because of special circumstances, the item was impossible to complete, place an X in the Not Applicable box.

Performance Level: All items must receive a rating of FULLY ACCOMPLISHED (or Not Applicable). If any items are rated Not Accomplished or Partially Accomplished, the student and evaluator will discuss this and decide which learning activities must be repeated.

When obtaining a urine specimen from a catheterized patient (without contamination), the student:

	Student Performance			
	Not Applicable	Not Accomplished	Partially Accomplished	Fully Accomplished
1. Cleansed port with antiseptic.	[ ]	[ ]	[ ]	[ ]
2. Aspirated 1 to 2 cc's urine without contamination	[ ]	[ ]	[ ]	[ ]
3. Labeled specimen properly.	[ ]	[ ]	[ ]	[ ]
4. Charted/recorded the procedure accurately.	[ ]	[ ]	[ ]	[ ]

STUDENT SELF-CHECK KEY

Terminology

1. E
2. H
3. A
4. K
5. C
6. G
7. I
8. F
9. B
10. J
11. D

Fill in the Blanks

1. Alcohol
2. 1 to 2 cc's
3. Emptied
4. Promptly
5. 20 minutes

Module No. IV-H-3

INSERTING A CATHETER:

URETHRAL AND RETENTION

INSERTING A CATHETER: URETHRAL AND RETENTION (REMOVAL OF RETENTION CATHETER)

INTRODUCTION

Patients may need urinary catheterization for a variety of reasons. The patient may feel some anxiety about the procedure so the health care assistant should help to allay these fears and anxieties. Fully understanding how to insert the catheter using sterile technique will enable the health assistant to prevent infection, cause no undue discomfort or injury, and to have the patient's cooperation during the procedure. In this module you will learn how to insert a urethral (straight) catheter and a retention (indwelling or Foley) catheter, and how to remove a retention catheter.

DIRECTIONS

In order to complete this module you will need to have completed Health Occupations Education I Modules I-A, B, F, and G on sterile technique and Module IV-H on the urinary system. You will also need:

1. Catheter tray (disposable)
2. Sterile gloves (your size)
3. Adequate light (goose neck lamp)
4. Injection syringe with needle
5. Bath blanket

Read the Objective. If you think you are able to perform this task, read the Check-Out Activities. Then either arrange with your evaluator to do the Check-Out Activities,

or

If you need to complete learning activities in order to be able to perform this task, locate the section on Learning Activities and go through them in the order in which they are listed.

OBJECTIVE

Given selected instructional exercises on catheterization, the necessary supplies and equipment, a patient or simulator, and a physician's order, you will insert a urethral catheter and a retention or Foley catheter, and remove a retention catheter.

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LEARNING ACTIVITIES

1. STUDY Student Information Sheets Nos. 1-4,

   and/or ______________________________

2. VIEW Trainex filmstrip "Urinary Catheterization" or view demonstration given by instructor.

3. COMPLETE Student Self-Check. Record your answers on a separate sheet of paper.

4. PRACTICE inserting a urethral catheter into the manikin.

5. PRACTICE inserting a Foley or a retention catheter.

6. PRACTICE removing a retention catheter.

7. ARRANGE with your evaluator to complete this module by going through the Check-Out Activities.

STUDENT INFORMATION SHEET NO. 1 – CATHETERS

A catheter is a tube for removing or inserting fluids. Catheterization is the insertion of a catheter into the urinary bladder. The catheter is introduced into the meatus which is the external opening to the urethra. The urethra, in turn, leads to the urinary bladder.

There are two types of catheters.

1. A non-retention or uretheral catheter is usually used for temporary intubation.
2. A retention catheter is sometimes called a Foley or indwelling catheter. It is used for prolonged intubation or for continuous drainage.

There are many purposes for catheterizing a patient.

1. To relieve urinary retention
2. To obtain a sterile urine specimen
3. To control the urine flow, especially of a bed-ridden patient
4. To irrigate the bladder
5. To instill medications
6. To prevent stress on abdominal or pelvis wounds/incisions due to a distended bladder
7. To determine the amount of residual urine

In most agencies, disposable sterile catheterization sets are used. These catheterization sets include the following equipments.

1. Appropriate catheter - usually made of rubber or plastic
2. An apparatus for receiving the urine
3. Cleansing solution to prepare the area around the meatus
4. Lubricant such as K-Y jelly
5. Sterile gloves

There are different sizes of catheters.

1. For the female patient, catheters sizes No. 14, Fr. and No. 16, Fr. are generally used.
2. For the male patient, catheters sizes No. 16, Fr. and No. 18, Fr. are generally used.
3. For the child patient, catheters sizes No. 8, Fr. and No. 10, Fr. are used.

Other equipment which is necessary to catheterize a patient (besides the catheterization set) includes the following.

1. Bath blanket
2. Sterile perineal pad (if needed)
3. Gooseneck lamp

STUDENT INFORMATION SHEET NO. 2 – INSERTION OF URETHRAL CATHETER

Purpose

The reasons for inserting an urethral catheter are to remove urine from the bladder for relief of distention; to determine volume of residual urine; and/or to obtain a urine specimen.

Equipment

Disposable catheter tray

There are *different* catheter trays for the one-time insertion of a catheter for the above purposes, and for the insertion of a *retention* catheter.

The Foley tray *for closed urinary drainage* should be used only when it is desired to insert a *retention* catheter.

Bath blanket

Goose neck lamp or other light source

Precaution

Ask the patient whether he/she is allergic to iodine. If not, povidone-iodine solution is used during this procedure. If the patient is allergic to iodine, hexachlorophene should be used as an alternative.

Procedure

1. Explain procedure to patient.
2. Replace top bedding with bath blanket.
3. Place patient in dorsal recumbent position and drape.
   Drape male patient with bath blanket to expose male genitalia.
4. Place tray on adjustable over-the-bed table.
5. Wash hands and dry.
6. Open tray. Carefully remove protective sheet and place under patient's buttocks.
7. Put on gloves.
8. Unpack the tray and "set up" everything after you have gloved, but before you have touched the patient.
9. Follow these steps for the preparation and insertion of catheter.

Female Patient

a) Drape patient with perineal towel.
b) Pour cleansing solution over cotton balls and open lubricant.
   Separate labia minora and cleanse the vestibule with moistened cotton balls. Use a firm downward stroke and a separate cotton ball on each side and center.
c) Lubricate tip of catheter.
d) Insert catheter into urethral to 1½ inches or until urine begins to flow. Direct end of catheter into tray. If a sterile specimen is to be collected, fill sterile specimen bottle.
e) When urine ceases to flow, withdraw the catheter slightly; then remove it and place it in catheter tray.

Male Patient

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a) Drape with fenestrated drape. Place penis through fenestration drape.
b) If necessary pull back redudant foreskin, cleanse the penis and the surface beneath the prepuce with moistened rayon balls.

c) Hold penis at a sixty degree angle toward the abdomen so that the urethral channel will be straight and allow passage of the catheter.
d) Lubricate catheter.
e) Do *not* touch the lubricate, catheter, etc., with the hand that has held the penis during prepping.
f) Insert catheter into urethra approximately 7 to 8 inches or until urine begins to flow. Direct end of catheter into tray. If a sterile specimen is to be collected, fill sterile specimen bottle.
g) When urine ceases to flow, withdraw the catheter slightly; then remove and place in the catheter tray.

10. Make patient comfortable.
11. Remove all equipment.
12. Place proper requisition slip with sterile specimen and send to laboratory.

When a culture is requested, it is important that this be taken to the laboratory *immediately* and brought to the attention of appropriate personnel, or else *refrigerated* at 40^{o}C until it can be taken to the laboratory. At room temperature, bacteria multiply in urine. Thus, a culture specimen left at room temperature for 20 minutes is no longer valid.

13. Measure urine and discard.
14. Discard equipment.

Record

1. Treatment and time
2. Amount of urine
3. Characteristics of urine
4. Specimen sent to laboratory (if ordered)
5. Patient reaction, if unusual

STUDENT INFORMATION SHEET NO. 3 – VARIATION: INSERTION OF RETENTION CATHETER

Purpose

In addition to the indications for a single catheterization outlined in Student Information Sheet No. 2, indications for a retention (indwelling) urinary catheter include the following.

1. Temporary relief of urinary obstruction
2. Accurate measurement of urinary output in severely ill patients
3. Facilitation of surgical repair of the urethra and surrounding structures
4. Provision of a dry environment for comatose or incontinent patients

Equipment

Bladder care Foley tray for closed urinary drainage with providone-iodine solution
Bath blanket
Goose neck lamp or other light source
Small syringe with 25-gauge needle for obtaining a urine culture through the catheter after insertion

Precaution

The retention (indwelling) catheter is a major cause of hospital-acquired urinary tract infection which can have fatal consequences. Strict attention to detail in the insertion and subsequent daily care of the retention catheter is of utmost importance.

Procedure

1. Follow the procedure for routine (single) catheterization through Step 9 (insertion of catheter) as outlined in Student Information Sheet No. 2.

   With the patient allergic to iodine, substitute hexachlorophene solution as noted.

   It is recommended that the syringe for inflating the catheter balloon be attached to the catheter prior to insertion.

2. Follow these steps for the inflation of balloon.

   a) Before inflation it is important to make sure that the balloon is inside the bladder prior to insertion. If it is within the urethra, it can cause harm to tissue.

      Female – Catheter should be inserted at least 3 inches prior to inflation of balloon.
      Male – Catheter should be inserted to the hilt prior to inflation of the balloon.

   b) Inflate the balloon with the full 10 cc of sterile water contained in the syringe.

      Although the catheter will say "5 cc Foley," some of the water will be used to fill the tubing leading to the balloon; therefore, it is recommended that the full 10 cc of sterile water contained in the syringe be used.

   c) Gently pull the catheter back until the balloon is well seated on the trigone of the bladder as indicated by resistance to further removal of the catheter.

3. Make the patient comfortable.
4. Hang drainage unit on bed frame.
5. Tape catheter to inner anterior thigh with precaution not to place tension on the catheter.

6. Pin tubing to sheet; excess tubing is to be secured on top of mattress.
7. Place povidone iodine ointment around the catheter at the junction of the catheter and the urethral meatus (provided the patient is not allergic to iodine).
8. If a specimen for culture is to be obtained (recommended), obtain by aspirating with 25 gauge syringe through the catheter or the designated aspiration port.

   It is important not to break the junction between the catheter and the connecting tubing.

9. Discard disposable equipment.

Record

1. Amount and characteristics of urine in initial return; measure volume or urine in the collection bag
2. Time and specimen sent to laboratory
3. Patient reaction, if unusual

STUDENT INFORMATION SHEET NO. 4 – REMOVAL OF RETENTION (INDWELLING) CATHETER

Equipment

10 cc syringe with needle
Paper or plastic bag to discard catheter

Procedure

1. Identify pateint.
2. Explain procedure to patient.
3. Replace top bedding with bath blanket.
4. Place patient in dorsal recumbent position.
5. Detach tape from thigh.
6. Deflate balloon by inserting needle which is attached to syringe, into tubing leading to balloon.
7. Pinch catheter (to prevent urine from being released in the urethra) and gently remove catheter.
8. Place catheter into trash bag.
9. Note amount of urine in drainage bag and then empty contents of bag.
10. Discard catheter, bag and syringe in appropriate container.

Record

1. Time removed
2. Amount of urine in bag
3. Characteristics of urine
4. Patient reaction, if unusual

STUDENT SELF-CHECK

1. A ________ is a tube for removing urine from the urinary bladder.

2. ________ ________ is folowed throughout catheterization procedure to help prevent ________ to the perineal area.

3. Immediately following the insertion of the catheter, the patient may react by tightening the ________ in that area.

4. List five items that should be included when recording the catheterization procedure on the patient's chart.

5. The ________ opening is the external opening of the urethra.

6. Another name for retention catheter is ________ or ________ .

7. For the female patient, a No. ________ or No. ________ size catheter is generally used.

8. The nonretention catheter is used for ________ ________ whereas the retention catheter is used for ________ ________ or ________ ________

CHECK-OUT ACTIVITIES

The statements below explain the activities you must be able to complete in order to finish this module. After you complete the activities, your evaluator will rate your performance using the Evaluator's Final Checklist, INSERTING A CATHETER: URETHRAL AND RETENTION (REMOVAL OF RETENTION CATHETER).

Given a tray, light and a patient or simulator, you will insert a urethral catheter, and a retention or Foley catheter and remove a retention catheter.

You will insert a urethral catheter according to the following standards.

1. Check physician's order.
2. Assemble equipment and supplies.
3. Identify patient and explain procedure.
4. Wash hands.
5. Position and drape patient.
6. Open catheter tray using sterile technique.
7. Put on sterile gloves.
8. Lubricate catheter.
9. Drape patient with sterile drapes.
10. Expose and cleanse meatus and surrounding area.
11. Insert lubricated catheter.
12. Drain bladder or collect specimen (as applicable).
13. Remove catheter.
14. Provide for patient's comfort.
15. Tidy area.
16. Chart/record procedure.

You will insert and secure a retention catheter and attach the catheter to a drainage bag according to the following standards.

1.–11. Use same steps as for inserting a urethra catheter.
12. Inflate balloon.
13. Provide for patient's comfort.
14. Hang drainage unit on bed frame.
15. Tape catheter to inner anterior thigh.
16. Pin tubing to sheet.
17. Cleanse around the catheter.
18. Obtain specimen by aspiration (if applicable).

You will remove a retention catheter according to the following standards.

1. Deflate balloon.
2. Check the catheter balloon to insure that it did not disintegrate.
3. Remove the catheter without undue discomfort to the patient.
4. Remove the catheter without soiling the patient or bed linens.

Student ____________________

Date ____________________

INSERTING A CATHETER: URETHRAL AND RETENTION (REMOVING A RETENTION CATHETER)

Evaluator's Final Checklist

Check the student's performance in the following elements of inserting a catheter: urethral and retention (removal of retention catheter)

Place an X in the appropriate box indicating Not Accomplished, Partially Accomplished, or Fully Accomplished. If, because of special circumstances, the item was impossible to complete, place an X in the Not Applicable box.

Performance Level: All items must receive a rating of FULLY ACCOMPLISHED (or Not Applicable). If any items are rated Not Accomplished or Partially Accomplished, the student and evaluator will discuss this and decide which learning activities must be repeated.

	Student Performance			
	Not Applicable	Not Accomplished	Partially Accomplished	Fully Accomplished
When inserting the urethral catheter, the student:				
1. Checked physician's order.	[ ]	[ ]	[ ]	[ ]
2. Assembled equipment and supplies.	[ ]	[ ]	[ ]	[ ]
3. Identified patient and explained procedures.	[ ]	[ ]	[ ]	[ ]
4. Washed hands.	[ ]	[ ]	[ ]	[ ]
5. Positioned and draped patient.	[ ]	[ ]	[ ]	[ ]
6. Opened catheter tray using sterile technique.	[ ]	[ ]	[ ]	[ ]
7. Put on sterile gloves.	[ ]	[ ]	[ ]	[ ]
8. Lubricated catheter.	[ ]	[ ]	[ ]	[ ]
9. Draped patient with sterile drapes.	[ ]	[ ]	[ ]	[ ]
10. Exposed and cleansed meatus and surrounding area.	[ ]	[ ]	[ ]	[ ]
11. Inserted lubricated catheter.	[ ]	[ ]	[ ]	[ ]
12. Drained bladder or collected specimen (as applicable).	[ ]	[ ]	[ ]	[ ]
13. Removed catheter.	[ ]	[ ]	[ ]	[ ]
14. Provided for patient's comfort.	[ ]	[ ]	[ ]	[ ]
15. Tidied area.	[ ]	[ ]	[ ]	[ ]
16. Charted/recorded procedure.	[ ]	[ ]	[ ]	[ ]
When inserting and securing a retention catheter and attaching the catheter to a drainage bag, the student:				
1-11. Used same steps as for inserting the urethral catheter.	[ ]	[ ]	[ ]	[ ]
12. Inflated balloon.	[ ]	[ ]	[ ]	[ ]
13. Provided for patient's comfort.	[ ]	[ ]	[ ]	[ ]
14. Hung drainage unit on bed frame.	[ ]	[ ]	[ ]	[ ]
15. Taped catheter to inner anterior thigh.	[ ]	[ ]	[ ]	[ ]
16. Pinned tubing to sheet.	[ ]	[ ]	[ ]	[ ]
17. Cleansed around the catheter.	[ ]	[ ]	[ ]	[ ]
18. Obtained specimen by aspiration (if applicable).	[ ]	[ ]	[ ]	[ ]

When removing the retention catheter, the student:

1. Deflated balloon. [ ] [ ] [ ] [ ]
2. Checked the catheter balloon to insure that it did not disintegrate. [ ] [ ] [ ] [ ]
3. Removed the catheter without undue discomfort to the patient. [ ] [ ] [ ] [ ]
4. Removed the catheter without soiling the patient or bed linens. [ ] [ ] [ ] [ ]

STUDENT SELF-CHECK KEY

1. Catheter
2. Sterile technique, infection
3. Muscles
4. (Must include all five items)
    - A. Time when patient was catheterized
    - B. Descripiton of the urine
    - C. Amount of urine obtained
    - D. Patient's reaction to procedure if unusual
    - E. Indication whether or not a specimen was taken
5. Meatus
6. Foley or indwelling
7. 14 Fr., 16 Fr.
8. Temporary intubation, prolonged intubation or continous drainage

Module No. IV-I

REPRODUCTIVE SYSTEM

REPRODUCTIVE SYSTEM

INTRODUCTION

A knowledge of the normal male and female reproductive structures and functions is important for the health assistant who wishes to understand the related care of the patient. Any surgery to either a man or woman's reproductive organs will have a strong psychological impact. In this module you will learn about the system in order that you will be more patient and understanding and give better care to the patient.

DIRECTIONS

Read the Objective. If you think you are able to perform the task, read the Check-Out Activities. Then either arrange with your evaluator to do the Check-Out Activities,

or

If you need to complete learning activities in order to be able to perform this task, locate the section on Learning Activities and go through them in the order in which they are listed.

OBJECTIVE

Given selected instructional exercises on the reproductive system, you will be able to identify terms related to the reproductive system; name and locate the organs of reproductive system of the male and female; describe the functions of the male and female reproductive system; name and describe the more common disorders and diseases of the reproductive system; describe the menstrual cycle in the female and its relationship to pregnancy; and list at least three major forms of contraception and the advantages and disadvantages of each. Mastery will be determined by scoring a minimum of ___ % on a teacher-prepared written examination.

LEARNING ACTIVITIES

1. READ

   a) *Health Assistant,* pages 257-264
   b) *Basic Sciences for Health Careers, Body Structures, and Function,* pages 108-117
   c) *Health Service Careers,* pages 81-87.

   and/or ________________________ .

2. STUDY Student Information Sheet No. 1

3. WRITE a short definition for the terminology listed on Student Assignment Sheet No. 1

4. VIEW the assigned films or filmstrips on reproductive system.

   and/or ________________________ .

5. IDENTIFY the parts of the male reproductive system and adjacent structure on Student Assignment Sheet No. 2.

6. IDENTIFY the parts of the female reproductive system and adjacent structures on Student Assignment Sheets Nos. 3-6.

7. DISCUSS with a partner the functions of each structure of the male and female reproductive system.

8. COMPLETE Student Self-Check. Record your answers on a separate sheet of paper.

9. DISCUSS with your instructor any questions you may have on this system.

10. ARRANGE with your evaluator to complete this module by going through the Check-Out Activities.

STUDENT INFORMATION SHEET NO. 1 – REPRODUCTIVE SYSTEM

Disorders and Diagnostic Tests of the Reproductive System

A. Female Reproductive System

1. Carcinoma – cancer which may occur in breast or uterus
2. Hysterectomy – surgical removal of uterus
3. Mastectomy – surgical removal of a breast
4. Dysmenorrhea – painful menstruation
5. Endoceritis – inflammation of the muscle membrane lining of cervix
6. Fibroid tumors – fibrous tumors of the uterus; usually benign
7. Retroversion – backward displacement of uterus
8. Salpingitis – inflammation of fallopian tube
9. Vaginitis – inflammation of vagina most often caused by trichomonas (parasite) or monilial (yeast)
10. Oophorectomy – removal of ovary
11. VD – gonorrhea, syphilis, herpes II – caused by microorganisms
12. Cystocele – weakening of the muscular wall between the vagina and bladder
13. Rectocele – weakening of the muscular wall between the vagina and rectum
14. Pap smear – used to detect cancer of uterus
15. D & C – dilation of cervix and curretage of the uterus

B. Male Reproductive System

1. Prostatitis – inflammation of the prostate gland; may cause frequent, painful urination or urine retention
2. Prostatectomy – surgical removal of all or part of the prostate gland
3. Orchitis – inflammation of testes
4. Epididymitis – painful swelling in groin and scrotum due to infection
5. Carcinoma – More common in the prostate gland of the older male
6. Benign prostatic hypertrophy – as men grow older, the prostate gland tends to enlarge without tumor formation
7. Veneral disease – gonorrhea and syphilis may be prevented by being highly selective of sexual partner and use of condom or prophylactic; can be treated.
   Disease or disorders of the male reproductive system are usually treated by the urologist.

Family Planning

Family planning involves determining the number, if any, of children a couple wants and can care for and ensures that "Every child is a wanted child."

A. Methods of Family Planning

1. *Abortion* is not a substitute for reliable contraception. Regardless of personal opinions favoring or disapproving abortion, one should be aware that it is not used instead of the usual methods of birth control.

2. *Abstinence* is the decision not to have sexual intercourse. It is a sure way to prevent pregnancy. Many students will realize that this choice has several advantages as there are no worries about contraception or pregnancy and no risk of sexually transmitted diseases.

3. *Contraception* is any means or device that prevents conception. Most reliable methods for women require a medical examination and a prescription.
   a) Avoiding intercourse when the ova is most likely to be in a Fallopian tube is

called "natural family planning." Charts of menstrual cycles, temperature, and changes in cervical mucus are carefully followed.

b) Other nonprescription contraceptives are the condom and chemical contraceptives. Douching and coitus interruptus are not recommended as methods of contraception.

c) The oral contraceptive, or birth control pill, is the most popular method of preventing pregnancy. The intrauterine device (IUD) and diaphragm are both very reliable. Each method of contraception has pros and cons associated with it. A person must decide if the contraceptive risk is greater than the risk of pregnancy.

4. *Voluntary sterilization* is a surgical procedure that renders a person incapable of reproduction. The vasectomy for men and the laparoscopy for women should be considered permanent.

5. *Adoption* sometimes enters into family planning. Persons contemplating adoption are wise to visit a reputable governmental or privately sponsored agency.

Teenagers should know about contraception. The rationale for providing contraceptive information is that it is better to prevent a pregnancy than for a teenager to have a baby.

STUDENT ASSIGNMENT SHEET NO. 1 – REPRODUCTIVE SYSTEM

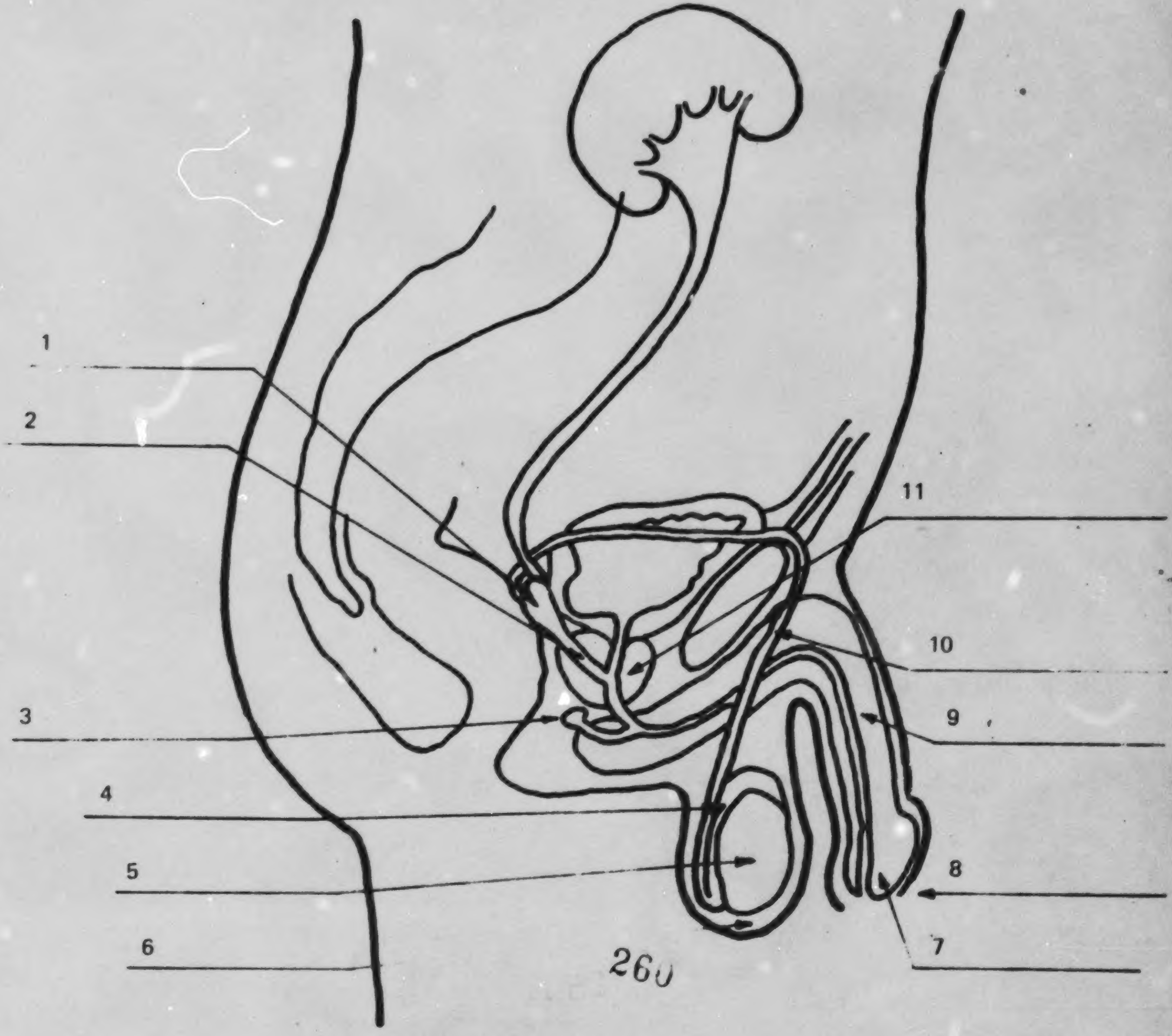
Write a short definition for the following terms.

1. Gynecology
2. Obstetrics
3. Reproduction
4. Conception
5. Copulation
6. Ovum
7. Spermatozoa
8. Puberty
9. Labia
10. Clitoris
11. Vaginal orifice
12. Cervix
13. Uterus
14. Endometrium
15. Fundus
16. Oviduct
17. Ovary
18. Menarche
19. Menstruation
20. Menopause
22. Perineum
23. Mammary gland
24. Lactiferous duct
25. Broad ligament
26. Amenorrhea
27. Dysmenorrhea
28. Scrotum
29. Testes or testicle
30. Spermatic cord
31. Epididymis
32. Vas deferens
33. Glans penis
34. Prepuce
35. Circumcision
36. Prostrate gland
37. Ejaculation
38. Semen
39. Impotent
40. Sterile
41. Embryo
42. Fetus
43. Clemateric
44. Erection
45. Surrogate (mother)
46. Artificial insemination
47. Libido
48. Abortion

STUDENT ASSIGNMENT SHEET NO. 2 – MALE REPRODUCTIVE SYSTEM

Identify the following structures by writing the correct term in the appropriate blank.

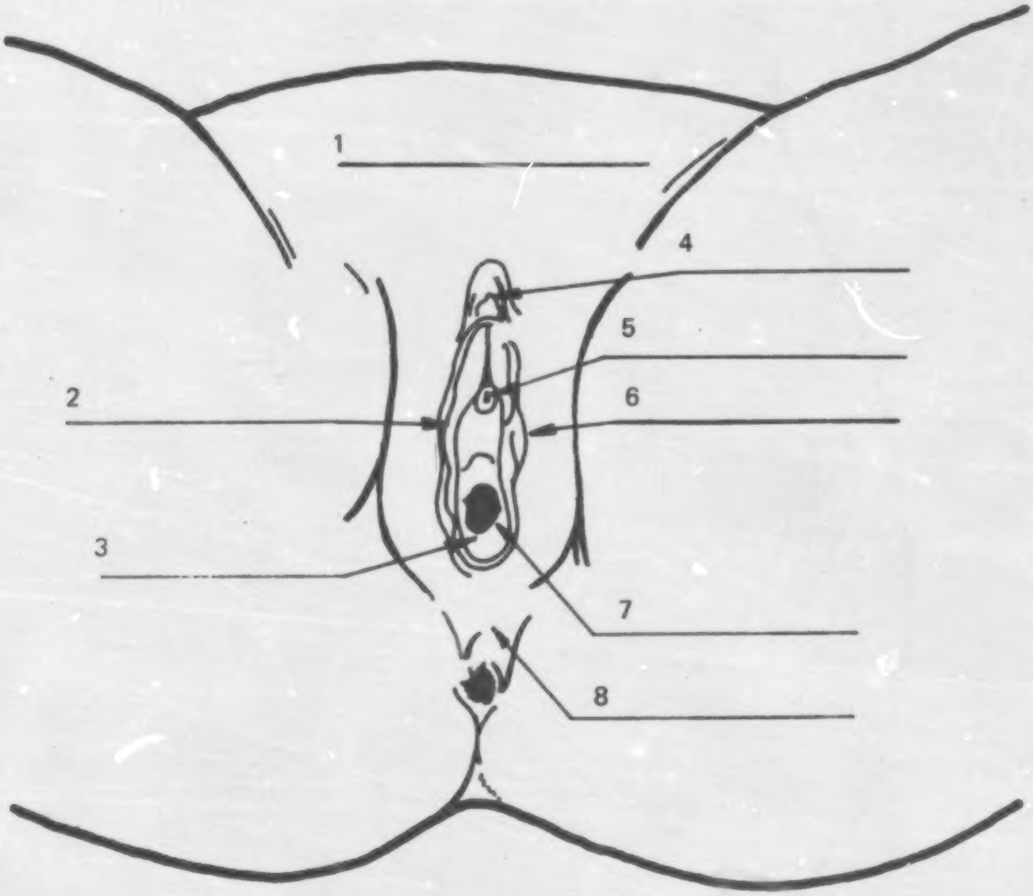
Scrotum
Testis
Epididymis
Vas diferens
Seminal vesical
Ejaculatory duct
Penis
Prepuce
Glans penis
Prostate gland
Bulbourethral gland



STUDENT ASSIGNMENT SHEET NO. 3 – FEMALE REPRODUCTIVE SYSTEM (EXTERNAL ORGANS)

Identify the following structures by writing the correct term in the appropriate blank.

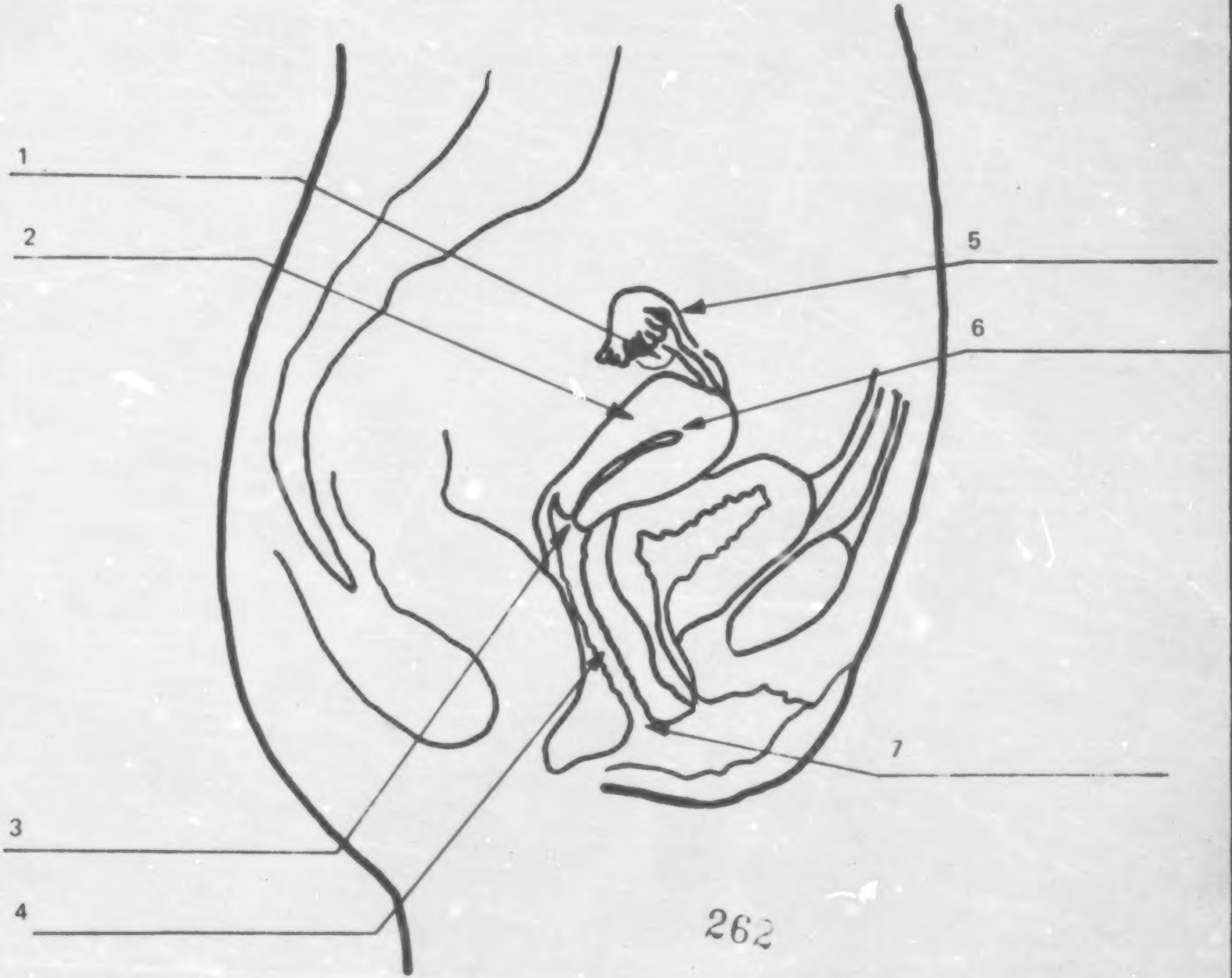
Perineum
Labia minora
Labia majora
Clitoris
Vaginal orifice
Meatus of urethra
Hymen
Mons pubis



STUDENT ASSIGNMENT SHEET NO. 4 – FEMALE REPRODUCTIVE SYSTEM (INTERNAL ORGANS)

Identify the following structures by writing the correct term in the appropriate blank.

Ovary
Fallopian tube
Uterus
Cervix
Endometrium
Vagina
Vaginal orifice



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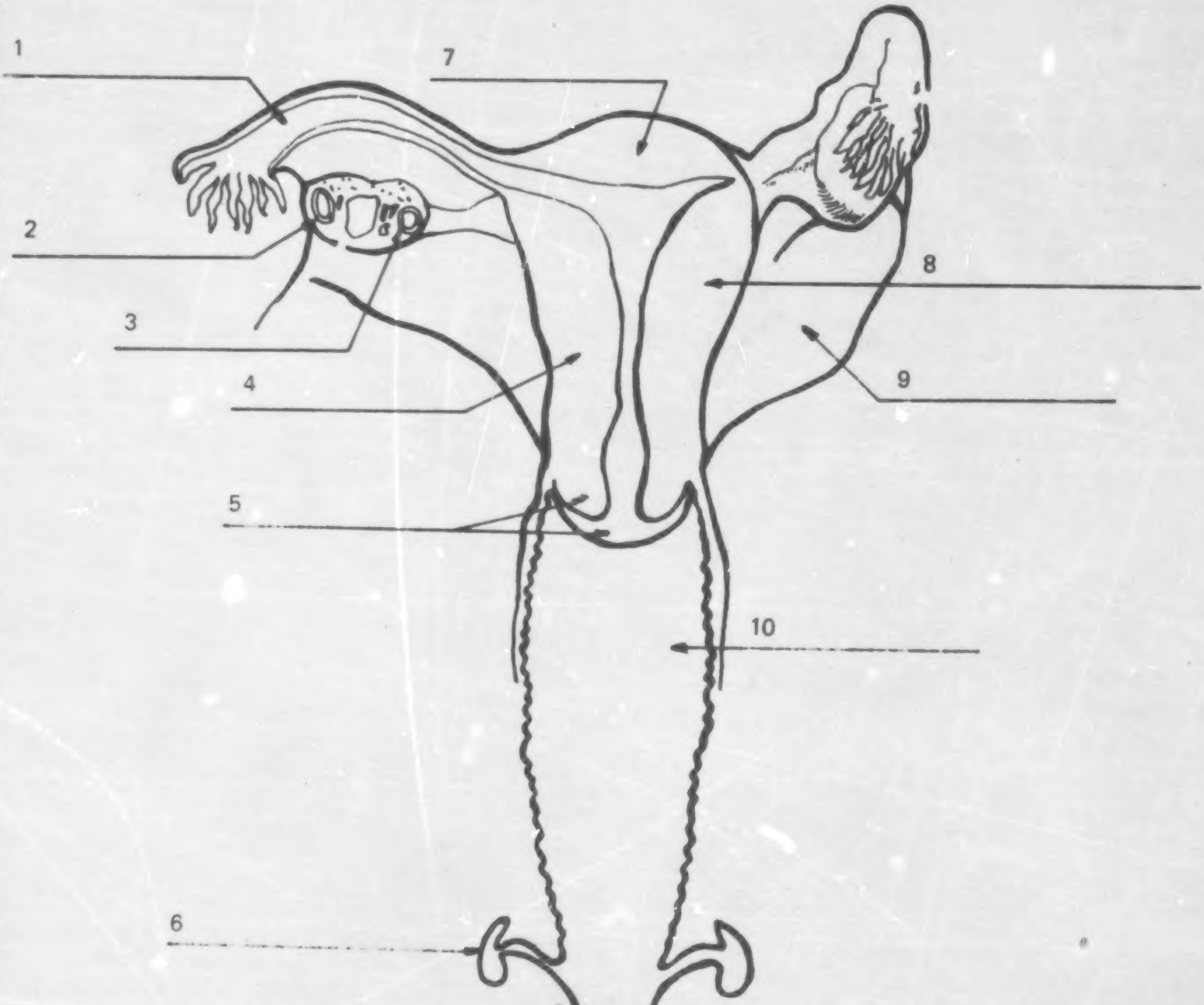
STUDENT ASSIGNMENT SHEET NO. 5 – FEMALE REPRODUCTIVE SYSTEM (UTERUS AND FALLOPIAN TUBES)

Identify the following structures by writing the correct term in the appropriate blank.

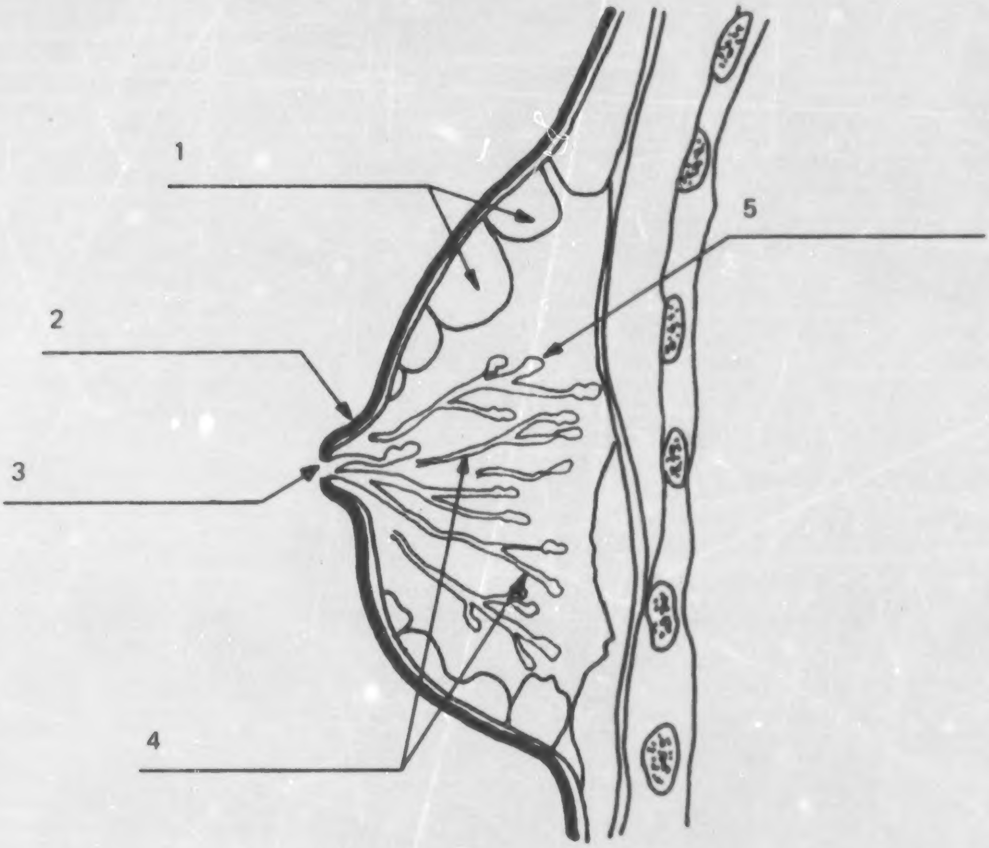
Broad ligament
Cervix
Body of uterus
Myometrium
Bartholen's gland
Vagina
Oviduct (fallopian tube)
Ovary
Maturing follicles



STUDENT ASSIGNMENT SHEET NO. 6 SIDE VIEW OF THE BREAST

Identify the following structures by writing the correct term in the appropriate blank.

Lactiferous ducts
Lobe of mammary gland tissue
Nipple
Areola
Adipose tissue



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STUDENT SELF-CHECK

1. Match the terms in Column A with their definitions in Column B.

COLUMN A

1. Gynecology
2. Semen
3. Puberty
4. Spermatozoa
5. Copulation
6. Circumcision
7. Endometrium
8. Vulva
9. Climacteric
10. Broad ligament
11. Menarche
12. Spermatic cord
13. Glans penis
14. Prepuce
15. Ovum

COLUMN B

A. Head of penis
B. Male reproductive cell
C. External female genitalia
D. Period at which one becomes capable of reproduction
E. Study of diseases of female reproductive system
F. Fold of skin over glans penis
G. Mucous membrane lining of the uterus
H. Fold of peritoneum that supports uterus
I. Sexual intercourse
J. Thick, white secretion of male reproductive glands
K. Cord suspending the testes; composed of veins, arteries, lymphatics, nerves and vas deferens
L. Beginning menstruation
M. Female reproductive cell
N. Surgical removal of prepuce
O. Period that marks the cessation of reproductive funtion in female or diminishing testicular activity in male

2. Name three functions of the male and female reproductive systems.

3. Match the male external and internal reproductive organs in Column A with their functions in Column B.

COLUMN A

1. Scrotum
2. Testes
3. Epididymis
4. Vas deferens
5. Penis and urethra

COLUMN B

A. Collects and stores sperm while maturing; conducts sperm to outside
B. Carries semen into vagina during copulation; carries urine from bladder
C. Produces sperm and testosterone
D. Protects testes; regulates and maintains favorable temperature for sperm production

4. Match the stages of the 28-day menstrual cycle in Column A to their descriptions in column B.

COLUMN A	COLUMN B
1. Days 1-5	A. Corpus luteum forms, secreting progesterone; endometrium thickens
2. Days 5-13	B. Hormone production decreases; endometrium shrinks
3. By day 14	C. Usually menstruation occurs; one of the many ova enclosed in a Graafian follicle begins to mature
4. Days 15-20	D. During this period of ovum maturation, the Graafian follicle produces estrogen under the control of the pituitary gland, and the endometrium repairs and begins to thicken
5. Days 21-28	E. Ovulation occurs; Graafian follicle ruptures and ovum is released into the abdominal cavity; fringed end of fallopian tube brings ovum into tube where it is propelled to uterus

5. Match the terms in Column A with their definitions in Column B.

COLUMN A	COLUMN B
1. Sterility	A. Surgical removal of uterus
2. Carcinoma	B. Inflammation of testes
3. Hysterectomy	C. Painful swelling in groin and scrotum
4. Orchitis	D. Surgical removal of breast
5. Mastectomy	E. Inability to reproduce
6. Epididymitis	F. Cancer in breast, uterus or prostate
7. Salpingitis	G. Surgical removal of ovary
8. Oopherectomy	H. Enlargement of prostate
9. Prostatic hypertrophy	I. Diagnostic test for cancer of cervix
10. Pap smear	J. Inflammation of fallopian tube

6. List three forms or methods of birth control.

CHECK-OUT ACTIVITIES

The statement below explains the activity you must be able to complete in order to finish this module. After you complete the activity, your evaluator will rate your performance using the Evaluator's Final Checklist, REPRODUCTION SYSTEM.

You will be given an examination on the reproduction system. You must score a minimum of ___ % on the teacher-prepared written examination.

IV-1

Student ______________________

Date ______________________

REPRODUCTIVE SYSTEM

Evaluator's Final Checklist

Check the student's performance in the following elements of the reproductive system.

Place an X in the appropriate box indicating Not Accomplished, Partially Accomplished, or Fully Accomplished. If, because of special circumstances, the item was impossible to complete, place an X in the Not Applicable box.

Performance Level: All items must receive a rating of FULLY ACCOMPLISHED (or Not Applicable). If any items are rated Not Accomplished or Partially Accomplished, the student and evaluator will discuss this and decide which learning activities must be repeated.

	Student Performance			
	Not Applicable	Not Accomplished	Partially Accomplished	Fully Accomplished
Student scored ____ % on the teacher-prepared written examination.	[ ]	[ ]	[ ]	[ ]

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STUDENT SELF CHECK KEY

1. Terminology
    1. E
    2. J
    3. D
    4. B
    5. I
    6. N
    7. G
    8. C
    9. O
    10. H
    11. L
    12. K
    13. A
    14. F

2. A. Perpetuation of species
    B. Sexual gratification
    C. Secretion of hormones

3. Matching
    1. D
    2. C
    3. A
    4. E
    5. B

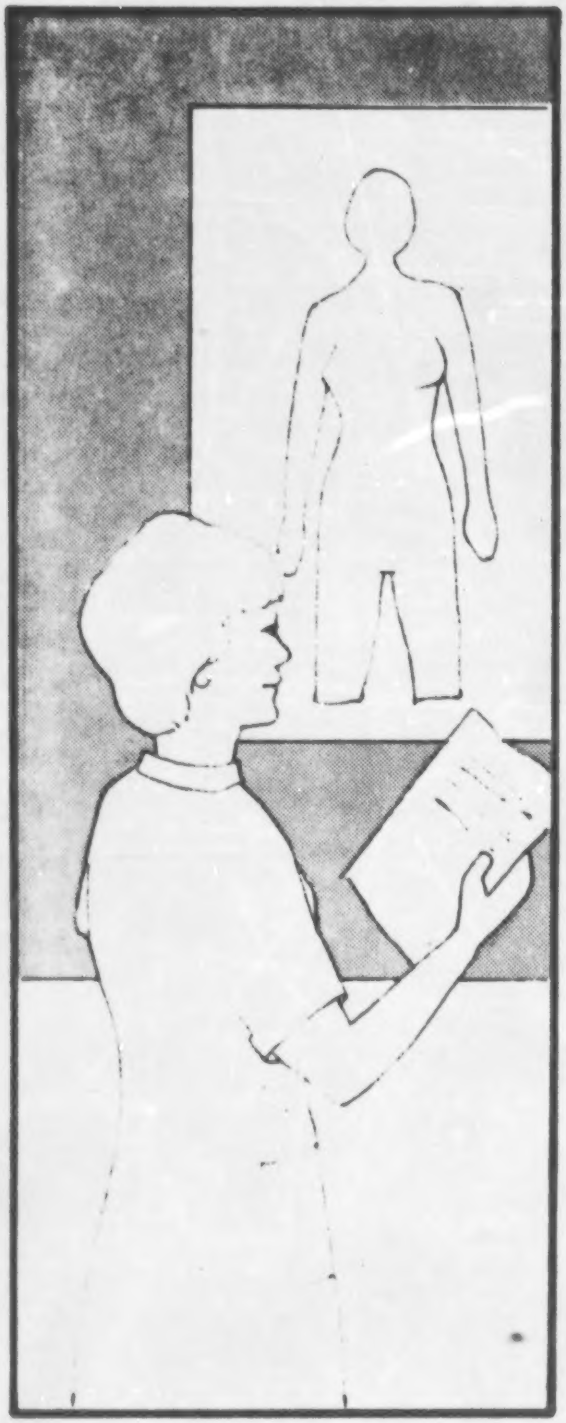
4. Matching
    1. C
    2. D
    3. E
    4. A
    5. B

5. Matching
    1. E
    2. F
    3. A
    4. B
    5. D
    6. C
    7. J
    8. G
    9. H
    10. I

6. May include any of the following.
    A. Condom
    B. Birth control pill
    C. IUD
    D. Diaphragm
    E. Foam
    F. Rhythm

VAGINAL IRRIGATION

VAGINAL IRRIGATION



INTRODUCTION

A vaginal irrigation (douche) is a cleansing of the vaginal canal by directing a stream or flow of solution into the vagina. The vaginal irrigation is usually done to rid the canal of discharge, to relieve inflammation or infection and to hasten healing. In this module, you will learn how to perform a *nonsterile* vaginal irrigation.

DIRECTIONS

In order to complete this module you will need to review the terminology related to the female reproductive system (Module IV-I). You will also need:

1. Patient or simulator
2. Vaginal irrigation container or disposable douche bag
3. Bed protector (chux)
4. Gloves
5. Irrigating standard or I.V. pole
6. Cup with cotton balls and disinfectant (optional); if you use cotton balls, have plastic bag or emesis basin for discarding
7. Irrigating solution (physician's or agency's choice)
8. Bed pan
9. Toilet tissue
10. Bath blanket

Read the Objective. If you think you are able to perform the task, read the Check-Out Activities. Then either arrange with your evaluator to do the Check-Out Activities,

or

If you need to complete learning activities in order to be able to perform this task, locate the section on Learning Activities and go through them in the order in which they are listed.

OBJECTIVE

Given selected instructional exercises, necessary supplies and equipment, a female patient or simulator and physician's orders, you will be able to prepare and administer a vaginal irrigation. The patient must be accorded total privacy. The prescribed solution must register at the correct temperature and must be instilled under low pressure.

The procedure will be performed according to pre-established medical guidelines. Refer to Evaluator's Final Checklist at conclusion of module.

LEARNING ACTIVITIES

1. READ Student Information Sheet No. 1,

   and or __________________________.

2. STUDY
   a) *Health Assistant,* "Procedure for Nonsterile Vaginal Douche," pages 262-263
   b) *V-TECS Catalog,* "Prepare and Give a Vaginal Douche," Performance Objective 73, page 85.

   and/or __________________________.

3. COMPLETE Student Self-Check. Record your answers on a separate sheet of paper.

4. OBSERVE a demonstration of a vaginal irrigation given by your instructor,

   and/or __________________________.

5. PRACTICE preparing and giving a vaginal irrigation on patient or manikin.

6. ARRANGE with your evaluator to complete this module by going through the Check Out Activities.

STUDENT INFORMATION SHEET NO.1 – VAGINAL IRRIGATION

Description

The vaginal irrigation is also known as a *vaginal douche*. This procedure involves cleansing the vaginal canal with a stream or flow of solution Too frequent irrigation of the vaginal canal may be damaging to the mucous lining of the vagina. Irrigations should never be done without a physician's order or instructions. A douche may either be sterile or a clean procedure. The solution is always ordered by the physician. He may order a plain water or a sterile water solution; sometimes he prescribes a solution with medication in it. An irrigation is not given to a patient who is menstruating, having vaginal bleeding or is pregnant. Discharged material in the vagina may be forced up into the uterus as you irrigate the vagina. Tell your superior staff member if your patient tells you she is menstruating or that she may be pregnant.

Purposes

A vaginal irrigation is given for the following reasons.

1. Clean the vaginal canal before surgery or treatment
2. Promote healing
3. Relieve inflammation and/or infection
4. Reduce or relieve discharge
5. Treat infection

Safety Checks

1. Check the physician's orders.
2. Check the type of solution against the Kardex or treatment sheet.
3. Check the temperature of the solution.
4. Maintain medical asepsis throughout the procedure if a sterile procedure is ordered.
6. Cleanse the vulva by separating the labia and allowing the solution to flow over the area. This will avoid contamination which may be lodged around the vaginal opening from being introduced in the vagina.
7. Take extreme precautions to prevent contaminating yourself, if the patient has a vaginal infection.

Unelss otherwise ordered, 1000 to 1500 ml of solution is usually prepared. The temperature of the solution should be around 105°F (40.5°C).

STUDENT SELF-CHECK

Write true or false for each statement.

1. A vaginal douche is the same as vaginal irrigation.
2. You may give the patient a douche if she says she wants one and always does it at home.
3. The irrigation solution is always ordered by the physician.
4. Plain water used for vaginal irrigation must always be sterile.
5. You may give a douche to a patient who is menstruating to clean out the blood clots.
6. The irrigating container is usually held about 12 inches above the tip of the irrigation tip during irrigation.
7. The temperature of the irrigating solution is usually 105° F.
8. List three reasons that a physician may order a douche.

CHECK-OUT ACTIVITIES

The statements below explain the activities you must be able to complete in order to finish this module. After you complete the activities, your evaluator will rate your performance using the Evaluator's Final Checklist, VAGINAL IRRIGATION.

You will be given a female patient or simulator, physician's order, and essential equipment and supplies for a vaginal irrigation. You will perform a nonsterile vaginal irrigation according to the following standards.

1. Provide total privacy for the patient.
2. Irrigate the vaginal canal with the prescribed solution at 105°F (40.5°C).
3. Instill solution under low pressure.
4. Chart/record accurately the type of procedure, temperature, and amount of solution.
5. Observe and chart/record accurately the amount, color, odor, and consistency of contents of *returned* solution.

IV-I-1

Student ____________________

VAGINAL IRRIGATION

Date ____________________

Evaluator's Final Checklist

Check the student's performance in the following elements of vaginal irrigation.

Place an X in the appropriate box indicating Not Accomplished, Partially Accomplished, or Fully Accomplished. If, because of special circumstances, the item was impossible to complete, place an X in the Not Applicable box.

Performance Level: All items must receive a rating of FULLY ACCOMPLISHED (or Not Applicable). If any items are rated Not Accomplished or Partially Accomplished, the student and evaluator will discuss this and decide which learning activities must be repeated.

	Student Performance			
	Not Applicable	Not Accomplished	Partially Accomplished	Fully Accomplished
When performing a nonsterile vaginal irrigation, the student:				
1. Provided total privacy for the patient.	[ ]	[ ]	[ ]	[ ]
2. Irrigated the canal with the prescribed solution at 105°F (40.5°C).	[ ]	[ ]	[ ]	[ ]
3. Instilled solution under low pressure.	[ ]	[ ]	[ ]	[ ]
4. Charted recorded accurately the type of procedure, temperature, and amount of solution.	[ ]	[ ]	[ ]	[ ]
5. Observed and charted recorded accurately the amount, color, odor and consistency of the contents of the returned solution.	[ ]	[ ]	[ ]	[ ]

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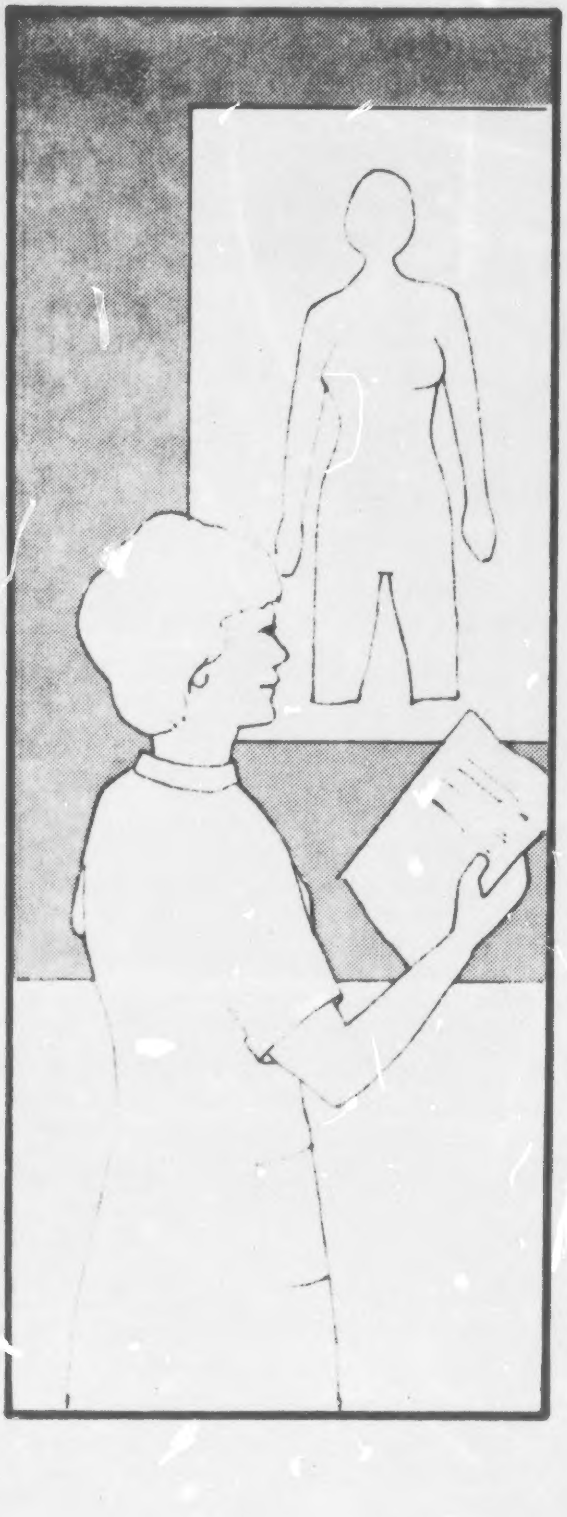
STUDENT SELF-CHECK KEY

1. True
2. False
3. True
4. False
5. False
6. True
7. True
8. Answers may vary.
    A. To clean vaginal canal
    B. To prepare patient for vaginal surgery
    C. To prevent or treat infection and/or inflammation
    D To reduce irritating discharge
    E. To hasten healing

PERINEAL CARE



INTRODUCTION

As a health care worker you will need to assist the patient with the care and cleansing of his/her perineal area. Perineal care (peri-care) is the term usually applied to the external irrigation or cleansing of the vulva and perineal area following voiding or defecation or for daily cleaning. Peri-care is used to prevent infection or prevent odors following the birth of a child or surgery of the genital or perineal area. The procedure is more commonly performed on females; however, it may be required for the male patient following surgery of the perineal area. In this module you will learn how to perform perineal care.

DIRECTIONS

In order to complete this module you will need:

1. Perineal care set
   a) 250 cc container for solution
   b) cotton balls or wipes
   c) dressing or sanitary pad
   d) T-binder
   e) dressing forceps (optional)
   f) plastic bag for soiled dressing
   g) disposable gloves (optional)
2. Bed pan
3. Patient or manikin
4. Bath blanket

Read the Objective. If you think you are able to perform this task, read the Check-Out Activities. Then either arrange with your evaluator to do the Check-Out Activities,

or

If you need to complete learning activities in order to be able to perform this task, locate the section on Learning Activities and go through them in the order in which they are listed.

OBJECTIVE

Given selected instructional exercises, a physician's order, necessary supplies and equipment, and a patient or manikin, you will be able to perform perineal care to a patient.

The procedure will be performed according to pre-established medical guidelines. Refer to Evaluator's Final Checklist at conclusion of module.

LEARNING ACTIVITIES

1. READ *Nursing Skills for Allied Health Services*, "Perineal Care," pages 682-690,

   and/or ______________________.

2. OBSERVE a demonstration by your instructor,

   and/or ______________________.

3. PRACTICE the perineal care procedure according to:
   - a) *Nursing Skills for Allied Health Service*, Performance Checklist,
   - b) *V-TECS Catalog Nursing Assistant*, page 84.

   and/or ______________________.

4. COMPLETE Student Self-Check. Record your answers on a separate sheet of paper.

STUDENT SELF-CHECK

1. Another name for perineal care is ________________.

2. The temperature of the water or solution used for perineal care should be approximately ________ °F.

3. The position of the patient when recieving perineal care is ____________

4. Which direction do you wipe when cleaning or drying the perineal area of the female patient?

5. What must the health care worker observe on the soiled pad or dressing before discarding it?

CHECK OUT ACTIVITIES

The statements below explain the activities you must be able to complete in order to finish this module. After you go through the activities, your evaluator will rate your performance using the Evaluator's Final Checklist, PERINEAL CARE.

You will be given the necessary equipment and supplies for perineal care, a physician's order, and a patient or manikin. You will perform perineal care to the patient according to the following standards.

1. Cleanse the area with the prescribed solution at 105°F (40.5°C).
2. Dry the area with downward strokes from the pubic area to the rectum.
3. Avoid unnecessary exposure throughout the procedure.
4. Chart/record the procedure.

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IV-I-2

Student ____________________

Date ____________________

PERINEAL CARE

Evaluator's Final Checklist

Check the student's performance in the following elements of perineal care.

Place an X in the appropriate box indicating Not Accomplished, Partially Accomplished, or Fully Accomplished. If, because of special circumstances, the item was impossible to complete, place an X in the Not Applicable box.

Performance Level: All items must receive a rating of FULLY ACCOMPLISHED (or Not Applicable). If any items are rated Not Accomplished or Partially Accomplished, the student and evaluator will discuss this and decide which learning activities must be repeated.

When performing perineal care, the student:

	Student Performance			
	Not Applicable	Not Accomplished	Partially Accomplished	Fully Accomplished
1. Cleansed the area with the prescribed solution at 105°F (40.5°C).	☐	☐	☐	☐
2. Dried the area with downward strokes from pubic area to rectum.	☐	☐	☐	☐
3. Avoided unnecessary exposure throughout the procedure.	☐	☐	☐	☐
4. Charted/recorded the procedure.	☐	☐	☐	☐

STUDENT SELF-CHECK KEY

1. Peri care

2. 105°F (40.5°C)

3. Lying on back with knees flexed, elevated, and draped

4. Clean and dry by making downward strokes, using one cotton ball for each stroke.

5. Observe amount and type of drainage.

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ENDOCRINE SYSTEM

INTRODUCTION

It is essential for you as a health care worker to have a knowledge of the endocrine system, (the ductless glands), in order to help you understand the reason that people react differently in similiar situations. The glands in this system secrete powerful hormones that regulate and control body functions. Any disturbance in the functioning of these glands may cause changes in appearance or functioning of the body. In this module, you will learn the keen importances of these glands to the body.

DIRECTIONS

Read the Objective. If you think you are able to perform this task, read the Check-Out Activities. Then either arrange with your evaluator to do the Check-Out Activities,

or

If you need to complete learning activities in order to be able to perform this task, locate the section on Learning Activities and go through them in the order in which they are listed.

OBJECTIVE

Given selected instructional exercises on the endocrine system, you will be able to demonstrate a knowledge of the terminology and general function of the endocrine system. You will be able to name, locate and describe the function of each gland and identify conditions caused by malfunctioning of each. Mastery will be determined by scoring a minimum of ___% on a teacher-prepared written examination.

LEARNING ACTIVITIES

1. READ
   a) *Health Assistant*, "Endocrine System," pages 225-230,
   b) *Basic Sciences for Health Careers*, pages 165-176,
   c) *Body Structures and Functions*, pages 118-132,
   d) *Modern Health*, pages 240-255.

   and/or ____________________.

2. STUDY Student Information Sheet No. 1.

3. WRITE a short definition for the terminology listed on Student Assignment Sheet No. 1.

4. VIEW Trainex filmstrip, "Endocrine System."

   and/or ____________________.

5. IDENTIFY endocrine glands on Student Assignment Sheet No. 2.

6. ANSWER questions on Student Assignment Sheet No. 3.

7. DISCUSS with your instructor any questions you have concerning the endocrine system.

8. COMPLETE Student Self-Check. Record your answers on a separate sheet of paper.

9. DEMONSTRATE ability to test urine for sugar and acetone by time limit set by your instructor.

10. ARRANGE with your evaluator to complete this module by going through the Check-Out Activities.

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STUDENT INFORMATION SHEET NO. 1 - ENDOCRINE SYSTEM

Fundamental Facts About Endocrine Glands

1. Located in widely separated parts of the body
2. Closely related to the nervous system in regulatory action

   The regulatory actions of the nervous and the endocrine systems differ in the speed and duration of response. Nerve action usually occurs in a fraction of a second and lasts only as long as the stimulation is present. Endocrine action is slower and produces a more prolonged stimulation and regulation.

3. Well-supplied with blood and often presents a bleeding problem in surgery
4. Interrelated actions; hormones for one gland act upon another gland
5. Composed of epithelial and connective tissue

Endocrine glands

1. Pineal (function not known; decreases in size after maturity)
2. Pituitary
3. Parathyroids
4. Throid
5. Thymus

   The thymus produces a hormone which stimulates production of lymphocytes by the lymph glands; decreases in size after puberty.

6. Adrenals
7. Pancreas
8. Gonads
9. Ovaries (female only)

   During pregnancy the female produces progesterone and estrogen from the placenta, an organ that provides nutrition, respiration, and excretion to fetus.

10. Testes (male only)

General Characteristics of Hormones

1. Concentration of one hormone may influence concentration of other hormones.
2. Hormones have a profound effect upon growth, development, and personality of an individual.
3. Most hormones are steroids or proteins and have specific functions.

Major Endocrine Glands, Their Hormones and Functions

	Gland	Hormone	Function
1.	Pituitary	TSH (thyrotropic hormone) ACTH (adrenocorticotropic hormone) FSH (follicle stimulating hormone) LH (luteinizing hormone) ADH (antidiuretic hormone) Oxytocin, Prolatin, and Somatotrapic hormone	Controls other gland stimulates growth
2.	Thyroid	Thyroxin	Controls rate of metabolism
3.	Parathyroid	Parathyroid hormone	Regulates calcium and phosphorous metabolism
4.	Pancreas	Insulin from Islets of Langerhans	Essential for utilization of glucose
5.	Gonads		
	a) Ovaries	Estrogen and progesterone	Development and maintenance of female reproductive organs
	b) Testes	Testosterone	Development and maintenance of male reproductive organs
6.	Adrenal		
	a) Adrenal medulla	Adrenaline	Prepares body for fight or flight
	b) Adrenal cortex	Corticoids	Aids body in coping with stress or infection

Disorders Caused by Malfunctioning of the Major Endocrine Glands

1. Disorders of the Pituitary

Cushing's disease – Due to a hypersecretion of ACTH or adrempcorticotrophic hormones. It results in a puffy look of the face, neck, and trunk and produces sexual dystrophy with amenorrhea in females and impotence in males.

Menstrual disturbances – Can occur from hypofunctioning of the gonadotrophic hormones. Reproduction is often affected if there is not enough hormone produced to stimulate the testes for sperm and the ovaries to cause ovulation.

Acromegaly – Can result from a *hypersecretion* or oversecretion of the somatotrophic hormone. This is where an adult has enlarged hands, feet, jaws, and cheeks resulting from bone growth. A hypersecretion of this hormone during the growth years can result in gigantism.

Dwarfism – The result of an *undersecretion* of somatotrophic hormone during the growth years. As an adult a decrease in this hormone will have no effect.

Diabetes insipidus – The result of hypofunctioning of the antidiuretic hormone or ADH. This is a disease (not to be confused with diabetes mellitus) that results in large amounts of urine being produced. The person having this disorder experiences thirst, weakness and dry skin due to the loss of body water.

Disorders of the Thyroid

Graves disease or hyperthyroidism – Overactivity of the thyroid – a condition which results in nervousness, rapid pulse and weight loss. In certain cases the eyes bulge, giving a staring look. This condition is called exophthalmic goiter. The gland may become somewhat enlarged. These patients tend to be restless and irritable.

Simple goiter – An enlargement of the thyroid gland, often as a result of not enough iodine in the diet. If there is a decrease in the production to thyroxin, the body cannot burn up the food it takes in and the person becomes fat, sluggish, and slow. There is not enough energy to keep warm.

Cretinism – Disorder in infants caused from malfunction of thyroid in which it produces only slightly or not at all. Symptoms include swelling of face, enlargement of lips, and thickening and protusion of tongue. Arms and legs do not grow to normal length and become short and thick. Infants can become mentally defective.

Myxedema – Severe grade of hypothyroidism occuring in adult life. Symptoms include drop in temperature and pulse; weight gain; skin thickening and swollen eyelids; hair thinning and falling out; tongue, hands and feet increasing in size; and possible deafness.

3. Disorders of the Parathyroid

Hypofunctioning of the glands may cause *tetany*. This is a disease marked by convulsive twitchings and could even result in death. Vitamin D and calcium are given to restore normal balance.

Hyperfunctioning of the glands may cause the calcium in the blood to increase, thereby causing a tendency to crystallize in the kidneys as kidney stones.

4. **Disorders of the Pancreas – Islets of Langerhans**

   Disorders can be caused by several factors such as disease of the gland itself, infections in other parts of the body, and dietary deficiencies.

   Hypoglycemia – A condition when too much insulin is produced; more glucose than usual leaves the blood.

   Hyperglycemia or diabetes mellitus – Too little insulin is produced: less sugar leaves the blood than should. Some of the excess sugar in the blood is usuallyexcreted in the urine and can be tested by the patient to help control the disease with insulin injections. You may wish to research this condition in detail.

5. **Disorders of the Adrenal Glands**

   Cushing's syndrome – A disease due to the hypersecretion of glucorticoids. Its most noticeable features are the so called moon face and buffalo hump that develop because of the redistribution of body fat.

   Addison's disease – Insufficient amount of hormones from the adrenal gland. Symptoms include muscular weakness, loss of appetite, fatigue, dark pigmentation of the skin, hypotension, low blood sugar, low basal metabolic rate, low blood sodium, and high serum potassium.

6. **Disorders of the Gonads**

   The main disturbances in the ovaries consist of cysts and tumors, disturbance in menstruation, and changes at the menopause due to stopping or cessation of hormone secretions.

   Tumors and sterility are problems resulting in disturbances in the testes.

Maintaining the Endocrine System

1. Adequate intake of iodine for manufacture of thyroxin; iodine is available naturally in some foods, water, or iodized salt
2. Well-balanced diet
3. Weight control
4. Regular physical examination
5. Observation for symptoms of endocrine malfuction

Major Factors Which Contribute to the Development of Diabetes Mellitus

1. Inability to produce insulin due to injury, disease, or tumor
2. Insulin shortage due to overeating
3. Aging
4. Familial tendency

Symptoms of Diabetes Mellitus

There are other disorders affecting the endocrine system, but diabetes is prevalent today and common to all ages of the population. Health facilities are concerned with the care of these patients.

1. Polyuria—Excessive amount of urine excreted over a period of time
2. Polydipsia—Excessive thirst
3. Polyphagia—Excessive craving for food
4. Glycosuria—Presence of abnormal amount of glucose in urine
5. Hyperglycemia—Abnormal amount of sugar in blood

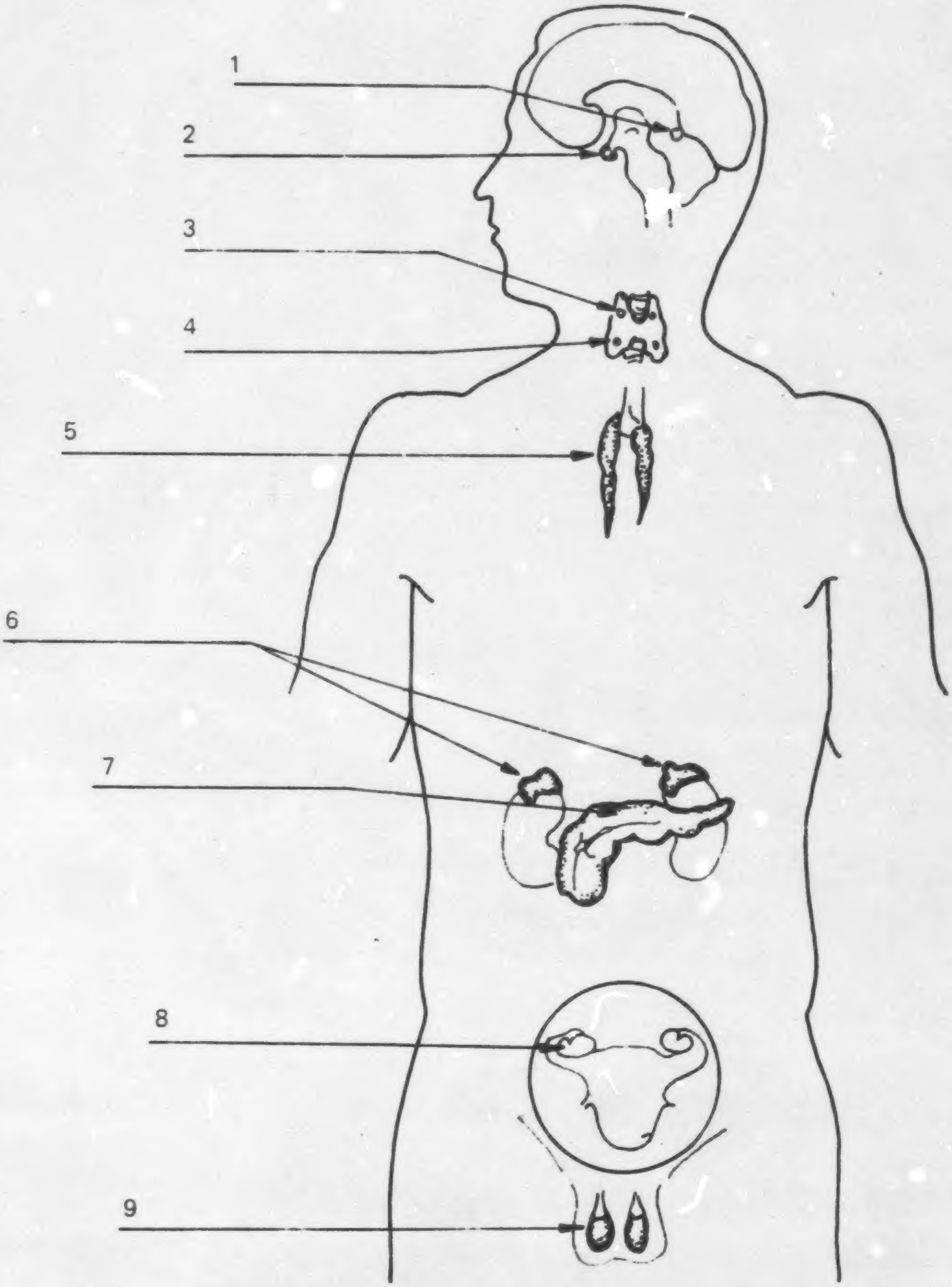
STUDENT ASSIGNMENT SHEET NO. 1 – ENDOCRINE SYSTEM

Write a short definition for these terms related to the endocrine system.

1. Endocrine glands
2. Endocrinology
3. Exocrine glands
4. Hormone
5. Hypersecretion
6. Hyposecretion
7. Cortisone
8. Adrenaline
9. Adrenal coxtex
10. Adrenal medulla
11. Steroid
12. Adrenal
13. Pituitary
14. Thyroid
15. Parathyroid
16. Pineal gland
17. Thymus gland
18. Gonads
19. Ovaries
20. Testes
21. Pancreas
22. Islets of Longerhans
23. Insulin
24. Glucose
25. Estrogen
26. Progesterone
27. Testosterone
28. Thyroxin
29. B.M.R.
30. Iodine
31. Tetany
32. Goiter
33. P.B.I.
34. Hypertrophy

STUDENT ASSIGNMENT SHEET NO. 2 – ENDOCRINE GLANDS

Identify the endocrine glands by writing the correct term in the appropriate blank. Place 1 asterisk (*) by the glands that begin to disappear at puberty; place 2 asterisks (**) by the small gland that very little is known about and tends to disappear with maturity.



STUDENT ASSIGNMENT SHEET NO. 3 -- REVIEW OF ENDOCRINE SYSTEM

1. How do the endocrine glands or ductless glands differ from exocrine glands?

2. The general name of the chemicals secreted from the endocrine gland is ____________.

3. The general function of the endocrine glands is to ________________________.

4. Name the 6 most important endocrine glands of the body.

5. Name the master gland that controls all of the other glands.

6. What gland regulates the rate of growth of the body?

7. The gonads in the female are called ______ and produce the hormones ________ and ____________________.

8. The gonads in the male are ______ and produce the hormone ______________.

9. There are four tiny glands embedded in the thyroid gland called the ________. When they malfunction they cause muscle spasms called ________.

10. The adrenal glands have the outer part called the ________ and produce the hormones ______ and ______________.

11. The inner portion of the adrenal glands is called the ______ and produces the hormone ______ and__________.

12. The adrenal glands are located ____________________.

13. What substance is necessary for the thyroid gland to produce thyroxin? Thyroxin helps to regulate the rate of ________________________.

14. Water and salt usage by the body is regulated by the ____________________.

15. The Islets of Langerhans are small groups of cells found in the pancreas and produce the hormone ______; a limited function (or lack) of this hormone causes a condition called ____________ ____________.

16. Diabetes ________ is the result of hypofunctioning of the antidiuretic hormone (ADH) that is secreted by the posterior pituitary.

17. The pituitary gland secretes the FSH hormone. What does FSH mean?

Match the terms in Column A with their definitions in Column B.

Column A

1. Acromegaly
2. Addison disease
3. Cretinism
4. Cushing's disease
5. Grave's disease
6. Myxedema

Column B

A. Severe hypothyroidism occuring in adult life

B. Elevated thyroid level or exophthalmic goiter

C. Insufficient amount of hormones from the adrenal gland

D. Disorder in infant caused by limited function or nonfunction of thyroid gland

E. Disease due to a hypersecretion of ACTH

F. Condition resulting from hypersecretion of the somatotrophic hormone

ANSWERS – STUDENT ASSIGNMENT SHEET NO. 3

1. Endocrine glands manufacture hormones and secrete them directly into the bloodstream which carries them to the cells of the body. The exocrine glands secrete substances into ducts which carry the chemical to the place where it will function.
2. Hormone
3. Regulate and control certain body functions
4. Pituitary, thyroid, parathyroid, adrenal, pancreas, gonads
5. Pituitary
6. Pituitary
7. Ovaries; estrogen and progesterone
8. Testes; testosterone
9. Parathyroid; tetany
10. Adrenal cortex; cortisone and aldosterone
11. Adrenal medulla; adrenaline and noradrenaline
12. On top of the kidneys
13. Iodine; metabolism
14. Adrenal cortex
15. Insulin; diabetes mellitus
16. Diabetes insipidus
17. Follicle stimulating hormone
18.
    1. F
    2. C
    3. D
    4. E
    5. B
    6. A

STUDENT SELF-CHECK

Terminology

Match the terms in Column A with their definitions in Column B.

COLUMN A

1. Endocrinology
2. Hormone
3. Steroid
4. Hypersecretion
5. Hyposecretion
6. Tetany
7. Endocrine gland
8. Diabetes mellitus
9. Diabetes insipidus
10. Insulin

COLUMN B

A. Excessive secretion
B. Organic compound derived from fats
C. Ductless gland that secretes directly into blood stream
D. Hormone produced in Islets of Langerhans
E. Study of the endocrine system
F. Inadequate secretions
G. Disturbed calcium metabolism resulting in intermittent muscle spasms of extremities
H. Internal secretions of a gland or an organ which regulates a body function
I. Disorder of carbohydrate metabolism characterized by hyperglycemia
J. Metabolic disorder characterized by intense thirst and excretion of large amount of urine

Multiple Choice

1. The gland that is known as the "master gland" is the

   A. pituitary
   B. pineal
   C. parathyroid
   D. gonad

2. Water and salt usage by the body is regulated by the

   A. gonads
   B. adrenals
   C. parathyroids
   D. Islets of Langerhans

3. The gland in our body which has both internal and external secretions is the

   A. gonads
   B. pancreas
   C. pituitary
   D. adrenals

4. The function of the parathyroid gland is to

   A. control water and salt balance
   B. control production of insulin
   C. control use of calcium
   D. control diuretic hormone

5. What substance is necessary for the thyroid gland to produce thyroxin?

   A. salt
   B. sugar
   C. iodine
   D. insulin

6. The male sex glands are called

   A. ovaries
   B. testes
   C. adrenals
   D. pineals

7. The female sex glands are called

   A. ovaries
   B. testes
   C. fallopians
   D. graffian follicle

8. A hypofunctioning of the pituitary gland may cause

   A. gigantism
   B. menstrual disturbance
   C. diabetes mellitus
   D. increased metabolic rate

9. A disease which results from a hypersecretion of gluccortoid is

   A. Downs' syndrone
   B. diabetes insipidus
   C. Cushing's syndrone
   D. tetany

10. A disease of the kidney caused by an insufficient amount of hormones from the adrenal gland and characterized by muscular weakness, fatigue, dark pigmentation of the skin, and hypotension is

    A. Graves' disease
    B. myxedema
    C. cretinism
    D. Addison's disease

Label Diagram

Diagram and label the endocrine glands on the following drawing.

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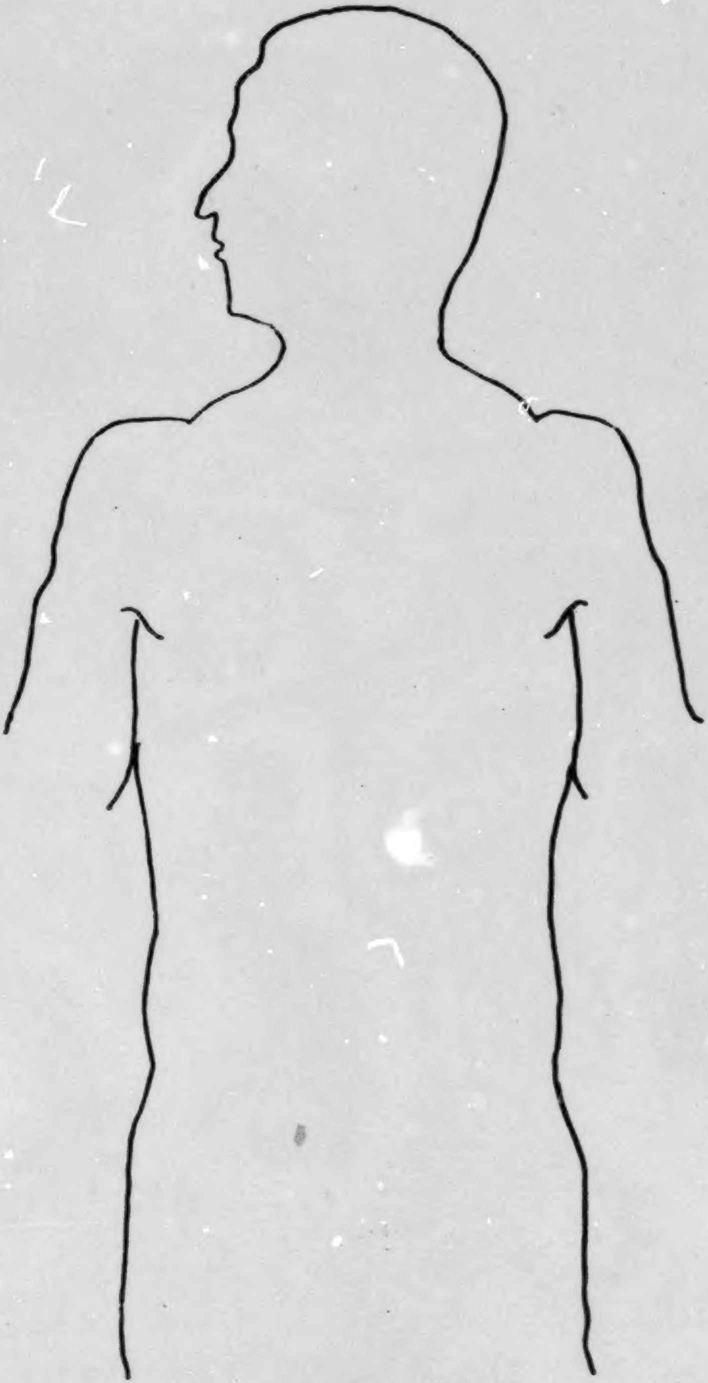

CHECK-OUT ACTIVITIES

The statement below explains the activity you must be able to complete in order to finish this module. After you complete the activities, your evaluator will rate your performance using the Evaluator's Final Checklist, ENDOCRINE SYSTEM.

You will be given an examination of the structure and function of the nervous system. You must score a minimum of____% on the teacher prepared written examination.

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IV-J

Student ______________________

Date ______________________

ENDOCRINE SYSTEM

Evaluator's Final Checklist

Check the student's performance in the following elements of endocrine system.

Place an X in the appropriate box indicating Not Accomplished, Partially Accomplished, or Fully Accomplished. If, because of special circumstances, the item was impossible to complete, place an X in the Not Applicable box.

Performance Level: All items must receive a rating of FULLY ACCOMPLISHED (or Not Applicable). If any items are rated Not Accomplished or Partially Accomplished, the student and evaluator will discuss this and decide which learning activities must be repeated.

	Student Performance			
	Not Applicable	Not Accomplished	Partially Accomplished	Fully Accomplished
Student scored _____% on the teacher-prepared written examination.	[ ]	[ ]	[ ]	[ ]

STUDENT SELF-CHECK KEY

Terminology

1. E
2. H
3. B
4. A
5. F
6. G
7. C
8. I
9. J
10. D

Multiple Choice

1. A
2. B
3. [illegible]
4. C
5. C
6. B
7. A
8. B
9. C
10. D

Label Diagram

1. Pineal
2. Pituitary
3. Parathyroid
4. Thyroid
5. Thymus
6. Pancreas
7. Adrenals
8. Ovaries
9. Testes

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NERVOUS SYSTEM

INTRODUCTION

The nervous system is the most highly organized system of the body. It consists of the brain, spinal cord, and nerves. The nervous system controls and coordinates all voluntary and involuntary body activities. In this module you will learn about the sturcture and function of the nervous system. This knowledge will enable you to better understand the patient with pain and paralysis.

DIRECTIONS

Read the Objective. If you think you are able to perform this task, read the Check-Out Activities. Then either arrange with your evaluator to do the Check-Out Activities,

or

If you need to complete learning activities in order to be able to perform this task, locate the section on Learning Activities and go through them in the order in which they are listed.

OBJECTIVE

Given selected instructional exercises on the nervous system you will be able to demonstrate a knowledge of the terminology, structure, and function of the nervous system by scoring a minimum of ____% on a teacher-prepared written examination.

LEARNING ACTIVITIES

1. READ
    - a) *Health Assistant*, pages 231-239,
    - b) *Body Structures and Functions*, pages 133-140,
    - c) *Basic Sciences for Health Careers*, pages 117-143,

    and or ______________________________ .

2. COMPLETE Student Assignment Sheets Nos. 1 and 2.

3. COMPLETE Student Self-Check. Record your answers on a separate sheet of paper.

4. Arrange with your evaluator to complete this module by going through the Check-Out Activities.

STUDENT ASSIGNMENT SHEET NO. 1 – NERVOUS SYSTEM

Write a brief definition for the following terms.

1. Neuron
2. Axon
3. Dendrite
4. Central nervous system
5. Peripheral nervous system
6. Autonomic nervous system
7. Meninges
8. Cerebrospinal fluid
9. Encephalitis
10. Nerves
11. Cerebrum
12. Cerebellum
13. Ganglion
14. Ventricle
15. Stimulus
16. Regeneration
17. Irritability
18. Conductivity
19. Pia mater
20. Arachnoed
21. Dura mater
22. Cortex
23. Brain stem
24. Thalamus
25. Hypothalamus
26. Medulla
27. Sympathetic system
28. Parasympathetic system
29. Reflex
30. Receptor
31. Response
32. Receptors
33. Effectors
34. Ganglia
35. Synapse
36. Sensory nerves
37. Motor nerves
38. Neurologist
39. Electroencephlogram
40. Paralysis

STUDENT ASSIGNMENT SHEET NO. 2 – DIAGRAMS

1. On a separate sheet of paper, draw and label the parts of a neuron. (Use example on page 231 in *Health Assistant* and page 133 of *Body Structure and Functions.)*

2. On a separate sheet of paper, draw and label a diagram of a cross section of the brain. (Use example on page 232 in *Health Assistant* and page 135 in *Body Structure and Functions.)*

3. On a separate sheet of paper, draw and label a diagram of the reflex area. (Use example on page 233 in *Health Assistant* and page 139 in *Body Structure and Functions.)*

Attach the completed diagrams to Student Assignment Sheet No. 1.

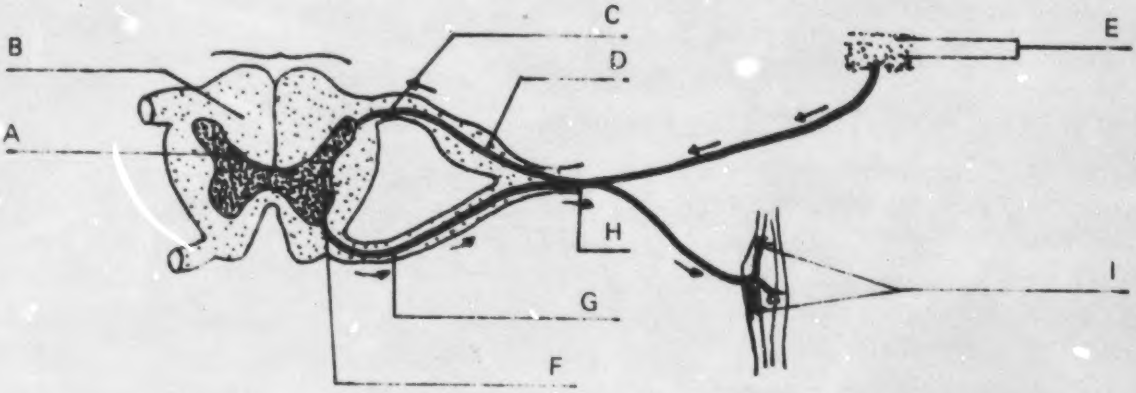
STUDENT SELF-CHECK

Fill in the Blanks

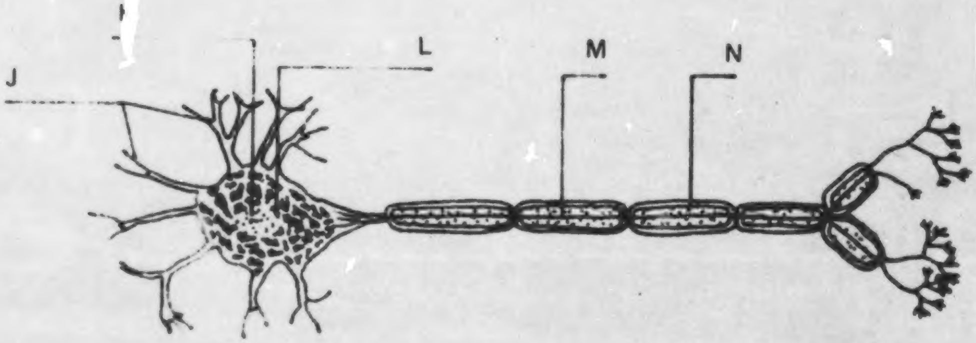
1. The brain is covered by three membranes called ______________.
2. The brain is divided into three parts: ______ , ______ ,and ______ .
3. The ______ regulates body temperature.
4. The ______ regulates the heartbeat.
5. The ________ controls the involuntary or automatic activities of the vital internal organs.
6. The ______ is another word for nerve cell. It has extensions called ______ and axon.
7. The nerve which carries impulses to the brain or spinal cord is called a sensory or ______ nerve.
8. If the nerve carries impulses *from* the brain or spinal cord to muscles or glands, it is called a motor or ______ nerve.
9. The autonomic system consists of two divisions: the ______ and ____________.
10. Anything in the environment which causes activity is called a ____________.
11. Impulses enter the neuron only through the______ and leave only through the ________.
12. The ________ refers to the brain and spinal cord.
13. Tissues within the ventricles of the cerebrum produce ______ . This flows to other ventricles which bathe the central nervous system and cushion it.
14. The pons and medulla form the ______________.
15. The largest portion of the brain is called the________ .

Diagrams

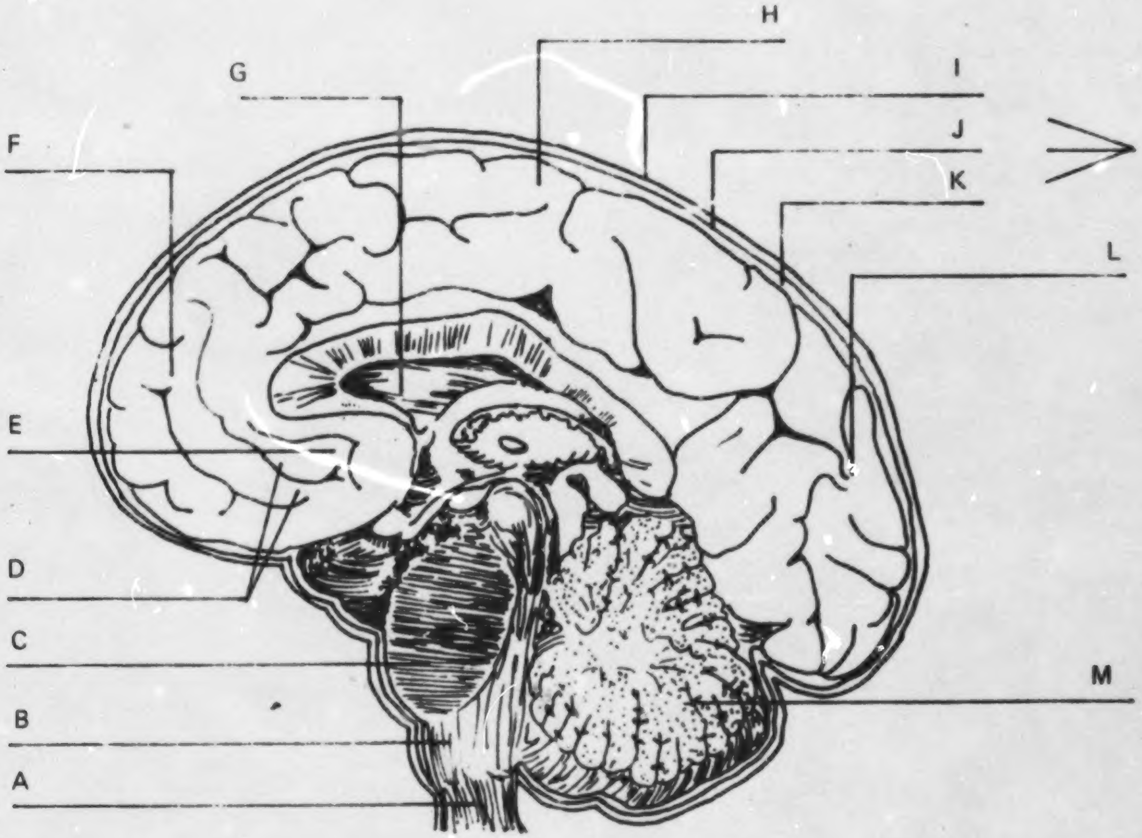
Identify the following parts by writing the correct term in the appropriate blank.



Reflex Arc



Nerve Cell



Cross Section of Brain

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CHECK-OUT ACTIVITIES

The statement below explains the activity you must be able to complete in order to finish this module. After you complete the activity, your evaluator will rate your performance using the Evaluator's Final Checklist, NERVOUS SYSTEM.

You will be given an examination of the structure and function of the nervous system. You must score a minimum of ___ % on the teacher-prepared written examination.

NERVOUS SYSTEM

Student ____________________

Date ____________________

Evaluator's Final Checklist

Check the student's performance in the following elements of the nervous system.

Place an X in the appropriate box indicating Not Accomplished, Partially Accomplished, or Fully Accomplished. If, because of special circumstances, the item was impossible to complete, place an X in the Not Applicable box.

Performance Level: All items must receive a rating of FULLY ACCOMPLISHED (or Not Applicable). If any items are rated Not Accomplished or Partially Accomplished, the student and evaluator will discuss this and decide which learning activities must be repeated.

	Student Performance			
	Not Applicable	Not Accomplished	Partially Accomplished	Fully Accomplished
Student scored _____ % on a teacher-prepared written examination.	[ ]	[ ]	[ ]	[ ]

STUDENT SELF-CHECK KEY

Fill in the Blanks

1. Meninges
2. Cerebrum, cerebellum, brain stem
3. Hypothalamus
4. Medulla
5. Autonomic nervous system
6. Neuron, dendrites
7. Offerent
8. Efferent
9. Sympathetic, parasympathetic
10. Stimulus
11. Dendrites, axon
12. Central nervous system
13. Cerebrospinal fluid
14. Brain stem
15. Cerebrum

Diagrams

A. Gray matter
B. White matter
C. Sensory neuron
D. Spinal ganglion
E. Skin, sensory nerve ending
F. Connecting neuron
G. Motor neuron
H. Spinal nerve
I. Muscle, motor nerve ending
J. Dendrites
K. Nucleus
L. Cell body
M. Axon
N. Myclin sheath

A. Spinal cord
B. Medulla
C. Pons
D. Convolution
E. Speech center
F. Frontal lobe
G. Ventricle
H. Parietal lobe
I. Dura mater
J. Arachnoid
K. Pia matter
L. Occiptal lobe
M. Cerebellum

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